

Interstate 80 High Occupancy Vehicle Lane Gap Closure Project

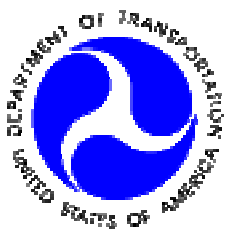


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Environmental Assessment/Initial Study

Located in Contra Costa County
Between the City of Crockett
and State Route 4
04-CC-80-KP 15.1/21.9
(PM 9.4/13.6)
EA 04-26370

November 2002



General Information About This Document

What's in this document?

This document is an Environmental Assessment/Initial Study (EA/IS), which examines the potential environmental impacts of alternatives for the proposed project located in Contra Costa, California. The document describes why the project is being proposed, the existing environment that could be affected by the project, potential impacts from the project, and measures to avoid, minimize, or mitigate impacts to the natural and human environment.

What should you do?

- Please read this EA/IS.
- We welcome your comments. If you have any concerns regarding the proposed project, please attend the Public Workshop at the Hillcrest Elementary School, Multi-Purpose Room, 601 California Street, Rodeo on December 11, 2002, from 5 to 8 PM, and/or send your written comments to Caltrans by the deadline. Submit comments via regular mail to:

Cher Daniels, Chief
Office of Environmental Management, S-1
Caltrans District 3 Sacramento Area Office
2389 Gateway Oaks Drive
Sacramento, CA 95833

ATTN: Ken Lastufka, Associate Environmental Planner
via email to ken_lastufka@dot.ca.gov.

- Submit comments by the deadline: January 3, 2003.

What happens after this?

After comments are received from the public and reviewing agencies, Caltrans may (1) give environmental approval to the proposed project, (2) undertake additional environmental studies, or (3) abandon the project. If the project were given environmental approval and funding were appropriated, Caltrans could design and construct all or part of the project.

For individuals with sensory disabilities, this document is available in Braille, large print, on audiocassette, or computer disk. To obtain a copy in one of these alternate formats, please call or write to Caltrans, Attn: Ken Lastufka, Office of Environmental Management, S-1, 2389 Gateway Oaks Drive, Sacramento, CA 95833; (916) 274-0586 Voice, or use the California Relay Service TTY number, 1-800-735-2929.

Note: Original dimensions in EA/IS are in metric. English dimensions are approximate.

Interstate 80 High Occupancy Vehicle Lane Gap Closure Project

Located in Contra Costa County Between the City of Crockett and State Route 4
04-CC-80-KP 15.1/21.9
(PM 9.4/13.6)

ENVIRONMENTAL ASSESSMENT/ INITIAL STUDY DRAFT

Submitted Pursuant to:
(Federal) 42 USC 4332(2)(C)
(State) Division 13, Public Resources Code

U.S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration, and
THE STATE OF CALIFORNIA
Department of Transportation

11-25-02

Date of Approval



JOHN D. WEBB
Office Chief
North Region Environmental Services
California Department of Transportation

11/26/02

Date of Approval



MAISER KHALED
Chief, District Operations - North
Federal Highway Administration
California Division

Negative Declaration

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to construct high occupancy vehicle (HOV) lanes on Interstate 80 between State Route 4 and the Carquinez Bridge (KP 15.1 – 21.9). The project will close a current gap of approximately 7.7 kilometers (4.8 miles) in HOV lanes. The project will provide a lane in each direction for HOV use during peak hours and mixed flow use during off-peak hours. Closing the gap will create continuous HOV lanes from the Carquinez Bridge to San Francisco.

Determination

Caltrans has prepared an Initial Study, and determines from this study that the proposed project would not have a significant effect on the environment for the following reasons:

- The project will have no effects on agriculture, floodplains, fish and wildlife, endangered species and habitat, wetlands, cultural resources, mineral resources, and recreation.
- The project will have no significant effect on air quality, scenic resources, geology and soils, vegetation, land use and growth, socioeconomic, neighborhoods, geology, hazardous waste, water quality/hydrology, noise, public services, transportation and traffic, and utilities.

Proposed mitigation measures include:

Community

Demolition of California Street Overcrossing

- A shuttle service between the Viewpoint Subdivision and Hillcrest School will be provided by a transportation provider.
- The John Swett Unified School District will either be compensated for increased transportation costs or Caltrans will negotiate directly with the current transportation provider.

Park and Ride Lot

- During off-ramp reconstruction at the park and ride lot on the eastern side of I-80, signs will direct users to the lot available on the western side of I-80.

Hazardous Waste/Material

- Lead based paint on bridge structures and yellow traffic stripes will be removed as part of the project construction. The material will be disposed of at a Class 1 disposal facility.
- Based on soil testing results, any aerially deposited lead may be removed or re-used within the project limits.

Noise

Proposed Soundwalls

- Five soundwalls are proposed as part of the project. A final determination to construct soundwalls will be made after the public input process has been completed and the soundwalls have been found to be cost-effective during the detail design stage.

Construction Activities

- Surrounding residents and businesses will be notified in advance of upcoming construction activities.
- Noise barriers should be constructed as first items of work, where feasible.
- Stock piled dirt as earthen berms will be used to attenuate the impact of construction activities.
- Temporary noise barriers/curtains will be used where feasible.
- A field office to handle noise complaints and keep the community informed of upcoming especially noisy construction activities will be established.
- On-site noise monitoring will be conducted during demolition to document actual noise levels.

Utilities/Emergency Services

- Emergency service providers will be notified of the proposed dates of the California Street overcrossing structure closure.
- All emergency service providers will be contacted prior to any ramp closures. If possible, closed ramps will open during emergency situations.

Vegetation

- Areas of Eucalyptus tree removal will be re-vegetated with native species that occur in the project area.

Visual Resources

- Proposed soundwalls will have plantings to soften their appearance.
- All soundwall aesthetics will be compatible with the existing walls found in the vicinity of the project area.
- All bridge structure and rail aesthetics on the California Street Bridge will be compatible with the structures found in the vicinity of the project.
- Areas affected by a cut or fill should be re-seeded with Erosion Control Type 'D' seeding.
- All gore areas will be paved with color-treated stamped concrete compatible with those gore areas found in the project vicinity.
- Removed trees will be replaced with like varieties near their original location.
- The Willow Avenue interchange will be planted with native and draught tolerant shrubby ground covers.
- Sedimentation barriers (such as hay bales or soil filter fabrics) will be used to save topsoil and protect adjacent land and waterways from construction runoff.
- Prior to construction, topsoil should be collected, stockpiled, and later applied to the completed slopes.

JOHN D. WEBB
Office Chief
North Region Environmental Services
California Department of Transportation

Date

Summary

The California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA) propose to extend the high occupancy vehicle (HOV) lane on I-80 westbound from Oleum Refinery Road to SR 4 and eastbound from SR 4 to the Carquinez Bridge in Contra Costa County (KP 15.1 to 21.9 [PM 9.4 to 13.6]). The project will provide a lane in each direction for HOV use during peak hours and mixed flow use during off-peak hours.

Alternative Considered but Eliminated

The HOV/Auxiliary Lane Alternative (Alternative 3) is the same as the HOV Alternative, with the addition of a 3.6-meter (12-foot) auxiliary lane in both directions between SR 4 and Willow Avenue. This alternative was withdrawn, primarily because the auxiliary lane provided no operational improvement. The alternative also increased the cost of the project due to additional excavation and retaining wall height.

Project Alternatives

Alternative 1 – HOV Alternative

Alternative 1 involves construction of a westbound HOV lane from Oleum Refinery Road to Route 4 and an eastbound HOV lane from Route 4 to the Carquinez Bridge. This alternative also includes the replacement of the California Street Overcrossing, realignment of the eastbound on- and off-ramps at SR 4 and all the ramps at Willow Avenue, and the addition of HOV bypass lanes on the on- and off-ramps of Willow Avenue and Cummings Skyway. The eastbound off-ramp at Willow Avenue will be replaced.

Alternative 2 – No Build

The No Build Alternative would not implement any of the improvements involved in the project.

Below is a summary of potential environmental impacts from the proposed project.

Summary of Potential Impacts From Alternatives

Potential Impact		Alternative 1	Alternative 2, No Build Alternative
Air Quality		<ul style="list-style-type: none"> • Generate dust during construction activities • Construction emissions 	No air quality impacts are associated with the no-build alt.
Land use	Consistency with the City of Hercules General Plan	Alt. 1 is consistent with the City of Hercules General Plan	The no-build alt. is not consistent with the City of Hercules General Plan
	Consistency with the Contra Costa County General Plan	Alt. 1 is consistent with the Contra Costa General Plan	The no-build alt. is not consistent with the Contra Costa General Plan
Social and Economic		Potential temporary impacts associated with Alt. 1: <ul style="list-style-type: none"> • Demolition and closure of Calif. St. overcrossing • Restricted access to elementary school • Ramp closures • Emergency vehicle access 	No social or economic impacts are associated with the no-build alt.
Relocation	Housing displacements	Two potential residential displacements adjacent to I-80 and California Street	No residential displacements are associated with the no-build alt.
	Utility service relocation	Possible temporary utility relocation at the Calif. St. overcrossing	No utility relocation is associated with the no-build alt.
Noise		Potential noise impacts associated with Alt. 1: <ul style="list-style-type: none"> • Increase noise for adjacent residents • Demolition of the Calif. St. overcrossing (temporary impact) 	No noise impacts are associated with the no-build alt.
Waterways and hydrologic systems		No impacts to waterways and hydrologic systems with SWMP and Statewide Storm Water Practice guidelines incorporated into project design	No waterways and hydrologic systems impacts are associated with the no-build alt.
Water quality		No impacts to water quality with SWMP and Statewide Storm Water Practice guidelines incorporated into project design	No water quality impacts are associated with the no-build alt.
Geology/Soils/Seismicity		<ul style="list-style-type: none"> • Potential seismic impacts 	No geology impacts are associated with the no-build alt.
Hazardous waste sites		<ul style="list-style-type: none"> • Potential lead based paint on bridge structures • Yellow traffic stripes may contain heavy metals • Potential aerially deposited lead on soil within project limits 	No hazardous waste/materials impacts are associated with the no-build alt.
Paleontological resources		Alt. 1 could affect potential paleontological resources (monitoring during construction is proposed)	The no-build alt. does not affect paleontological resources

Permits:

The California Department of Fish and Game recommended that a CDFG 1601 Streambed Alteration Agreement for encroachment on riparian areas be acquired as a precaution (refer to

Section 3.12). Because only the construction of the eastbound elements of the project would potentially affect riparian areas, the 1601 agreement will be acquired once funding is secure for the eastbound portion of the project.

Caltrans must comply with two National Pollution Discharge Elimination System (NPDES) permits: Caltrans Statewide NPDES Storm Water Permit (Order No. 99-06-DWQ), adopted July 15, 1999, which covers all Caltrans roadway facilities in the State; and the NPDES General Permit, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activities (Order No. 99-08-DWQ), which regulates discharges from construction sites that disturb 5 acres or more of soil (refer to Section 3.6 for further information regarding these permits).

Property acquisition:

Two parcels, located on the west side of California Street near I-80, may be acquired as the result of the replacement of the California Street Overcrossing (refer to Section 3.2, Community Impacts).

Temporary construction easements:

A temporary construction easement (TCE) will be required for the construction of the project. Caltrans will obtain a TCE from the Philips Petroleum Corporation for a portion of their property located on the east side of California Street north of I-80 (Figure 1-2d).

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List of Technical Studies That Are Bound Separately

A number of technical studies were used to analyze the impacts of the proposed project and the no-build alternative, and are summarized in the draft EA/IS. These studies include:

- Air Quality Impact Report, May 2002
- Community Impact Assessment, August 2002
- Floodplain Hydraulic Study, July 2002
- Geotechnical Report, 2001
- Initial Site Assessment, January 2002
- Natural Environment Assessment, August 2002
- Negative Historic Property Survey Report, September 2002
- Noise Study Report, July 2002
- Paleontological Resource Assessment, March 2002
- Relocation Impact Memorandum, August 2002
- Traffic Noise Impact Report, May 2002
- Traffic Operations Analysis, April 2002
- Visual Impact Assessment, August 2002
- Water Quality Report, July 2002

Technical studies are available for viewing, along with copies of the draft EA/IS at:

Caltrans
District 3 Sacramento Office
Office of Environmental Management
2389 Gateway Oaks Drive
Sacramento, CA 95833
Attn: Ken Lastufka
(916) 274-5826

Caltrans
District 4 Oakland Office
111 Grand Avenue
Oakland, CA 94612
Attn: Kevin Azarmi
(510) 286-6428

List of Abbreviated Terms

AADT	Annual average daily traffic
ABAG	Association of Bay Area Governments
ACOE	US Army Corps of Engineers
ADL	Aerially deposited lead
BART	Bay Area Rapid Transit
BMP	Best Management Practice
Caltrans	California Department of Transportation
CCTA	Contra Costa Transportation Authority
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CO	Carbon monoxide
CTC	California Transportation Commission
CWA	Clean Water Act
EB	Eastbound
EIR	Environmental Impact Report
FHWA	Federal Highway Administration
ft	foot/feet
HAS	Hydrologic sub-area
HOV	High occupancy vehicle
IIP	Interregional Improvement Program
km	kilometer(s)
KP	kilometer post
LOS	Level of service
m	meter(s)
mi	mile(s)
MTC	Metropolitan Transportation Commission
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
PM	post mile
RCR	Route Concept Report
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SMP	System Management Plan
SR	State Route
STIP	State Transportation Improvement Plan
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TNM	Traffic noise model
TOS	Traffic Operations System
WB	Westbound
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
CDFG	California Department of Fish and Game
SOV	Single occupant vehicle

Chapter 1 Purpose and Need

1.1 Project Description

The project is located in northeast Contra Costa County, between the communities of Crockett and Rodeo (Figure 1-1). This project proposes to extend the HOV lane on I-80 westbound from Oleum Refinery Road to SR 4 and eastbound from SR 4 to the Carquinez Bridge (KP 15.1 to 21.9 [PM 9.4 to 13.6]), closing a current gap of approximately 7.7 kilometers (4.8 miles) in HOV lanes. The project will provide a lane in each direction for HOV use during peak hours and mixed flow during off-peak hours. Closing the gap will create continuous HOV lanes from the Carquinez Bridge to San Francisco.

The existing facility was constructed in 1958. There are three lanes in the westbound direction and three in the eastbound. There are eastbound and westbound on-ramps and off-ramps at the SR 4, Willow Avenue, and Cummings Skyway interchanges. Within the project limits, Sycamore Avenue, SR 4, Willow Avenue, and Pomona Street cross under I-80, while California Street and Cummings Skyway cross over.

The existing freeway, will be widened by 8.1 meters (26.6 feet) beyond the edge of the existing travel way in both the east- and westbound directions in order to provide minimum standard left and right shoulders and four 3.6-meter (12-foot) lanes.

Several structures will also be widened. The Willow Avenue Undercrossing will require widening of 3.6 meters (11.8 feet) on the westbound side. Refinery Road #3 Undercrossing and Oleum Refinery Road Undercrossing are reinforced concrete structures with vertical abutments and cantilever retaining walls. These structures will be extended 1.2 meters (3.9 feet) on both sides.

The project also involves the demolition and re-construction of the California Street overcrossing, realignment of the eastbound on- and off-ramps at SR 4 and all the ramps at Willow Avenue, and the addition of HOV bypass lanes on the on- and off-ramps of Willow Avenue and Cummings Skyway. The existing eastbound off-ramp at Willow Avenue will be replaced. The existing off-ramp is sub-standard. With the widening of the freeway mainline, the deceleration length of the sub-standard ramp geometry will become worse. The vertical clearance over Willow Avenue is also a concern. The new eastbound off-ramp structure improves the ramp geometric and improves the vertical clearance over Willow Avenue.

Five soundwalls, four retaining walls, and several shoulder barriers are also proposed at various locations. Please refer to Section 3.8 (Noise) for a detailed description of proposed soundwalls.

The first retaining wall is located along eastbound I-80 next to the eastbound on-ramp of SR 4. It is approximately 152 meters (500 feet). The second retaining wall is located in the eastbound

direction between SR 4 and Willow Avenue Interchange and is approximately 640 meters (2,100 feet) long. The third retaining wall extends approximately 260 meters (850 feet) from the eastbound Willow Avenue on-ramp. The last retaining wall is located in the westbound direction between SR 4 and Willow Avenue Interchange and is approximately 457 meters (1,500 feet) long. All retaining walls are approximately 8.5 meters (27.9 feet) in height.

Shoulder barriers, short retaining structure along the shoulder, are also being used. Maximum height will be 1.0 meter (3.3 feet) and will be used in a number of different locations between the California Street overcrossing and Cummings Skyway. Several shoulder barriers are also located along westbound I-80 at Willow Avenue.

Please refer to Figures 1-2a through 1-2g for the location of project features.

Construction Schedule

The project will be construction in two phases. The first phase involves constructing:

- Westbound HOV lane from Oleum Refinery Road to SR 4
- Soundwalls in both the west- and eastbound directions
- The westbound retaining wall between SR 4 and Willow Avenue
- Shoulder barriers along westbound I-80
- Demolition and re-construction of the California Street overcrossing
- HOV bypass lanes and ramp meter hardware on the westbound on-ramps at Cummings Skyway and Willow Avenue

Soundwalls are scheduled to begin in early 2005 and take approximately 2 months to complete. The demolition and reconstruction of the California Street overcrossing should begin soon after, in the spring of 2005. The work at the California Street overcrossing should take from 4 to 7 months to complete. Construction of the westbound HOV lanes should begin at this time as well. Construction of the westbound retaining wall is scheduled to begin in the summer of 2004 and take up to 6 months.

Work in the eastbound direction will not occur until funding is secured. This will involve:

- Eastbound HOV lane from SR 4 to the Carquinez Bridge
- The three eastbound retaining walls
- Shoulder barriers along eastbound I-80
- HOV bypass lanes and ramp meter hardware on the eastbound on-ramps at Cummings Skyway and Willow Avenue

This environmental document analyzes the potential impacts for the entire project, westbound and eastbound.

1.2 Project Purpose

Interstate 80 (I-80) is a critical east/west connector between the San Francisco Bay Area, Sacramento, and points east into, and beyond, the Sierras. The purpose of this project is to:

- Close the final gap in the existing high occupancy lanes (HOV) system on I-80 between the Carquinez Bridge and State Route (SR) 4 and create continuous HOV lanes on I-80 from the Carquinez Bridge to San Francisco
- Reduce travel delay
- Enhance intermodal transportation along the I-80 corridor in the Bay Area

The ultimate width of the I-80 corridor, as recommended in the Caltrans Route Concept Report (12-14 lanes), is not economically or physically feasible through the densely populated area surrounding I-80 through this area (Caltrans 1985). A number of projects already completed and/or planned for the region promote ridesharing and transit as the means to reduce the number of vehicles and improve the performance along this section of the I-80 corridor (see Section 1.4). The cost-effective solution is the completion of continuous HOV lanes on I-80 between the Carquinez and San Francisco/Oakland Bay Bridges. The Metropolitan Transportation Commission's (MTC) I-80 Corridor Study concluded that HOV lanes would be the backbone for the planned commuter bus network needed to serve the increase in commuters to urban centers (MTC 1996). The HOV system would increase the person-carrying capacity by providing a major travel time advantage for express bus, carpool, and vanpool commuters. As part of the Carquinez Bridge replacement project, a "what if" analysis was done by Caltrans to determine the merits of HOV lanes. This study projected time savings between 1.1 and 1.5 minutes for eastbound HOV users, and 3.2 minutes for westbound HOV users. In general, the study concluded that the construction of HOV lanes between SR 4 and the Carquinez Bridge and Cummings Skyway to SR 4 was desirable to efficiently move people through the corridor.

1.3 Project Need

1.3.1 Traffic Forecast

With the anticipated growth in both commuter and commercial traffic along this portion of the I-80 corridor, operational performance will only continue to decline in the years to come. Currently, travel delay through the project limits due to peak traffic conditions averages 4.8 minutes during the westbound A.M. peak hour and 4.6 minutes during the eastbound P.M. peak hour. Traffic forecasts suggest increased congestion and prolonged travel times will likely result if nothing is done to help rectify this developing problem. Table 1.2-1 describes the travel time and delay in 2025 with (Alternative 1) and without (No-build) the project. Note that the higher volume shown on I-80

under Alternative 1 is the result of regional redistribution of traffic from local streets and arterials when capacity and travel time on I-80 is improved.

Table 1.2-1 –Traffic Time and Delay, 2025

DIRECTION	ALTERNATIVE	MIXED-FLOW		HOV's		
		TRAVEL TIME (MIN.)	AVERAGE DELAY (MIN.)	TRAVEL TIME (MIN.)	AVERAGE DELAY (MIN.)	TRAVEL TIME SAVINGS (MIN.)
<i>Westbound I-80 (P.M. peak hour) Interstate 780 to Willow Ave.</i>	Alt. 2 (without project)	22.5	11.7	18.5	7.7	4.0
	Alt. 1	23.3	12.5	16.9	6.1	6.4
<i>Eastbound I-80 (A.M. peak hour) Pinole Valley Road to Interstate 780</i>	Alt. 2 (without project)	27.4	16.1	15.4	4.1	12.0
	Alt. 1	29.3	18.0	13.9	2.6	15.4

Source: Caltrans 2002. Traffic Operations Analysis.

Demographic and travel data from the MTC 1998 Regional Transportation Plan show a significant increase in population and employment for the Interstate 80 (I-80) corridor between Fairfield and Berkeley. Future population and employment is projected to increase congestion and travel time on the I-80 corridor up to 42 percent.

The Association of Bay Area Governments (ABAG) has compiled a forecast indicating origin and destination of commuters in the Bay Area. This data, used by the MTC, forecasts that between 1990 and 2010, the number of commuter work trips to Contra Costa County will increase 33.2 percent. The average for all nine counties in Caltrans District 4 (Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma Counties) is 21.6 percent.

Traffic volumes are also projected to show significant increases. The 2000 annual average daily traffic (AADT) volumes for this segment are as follows:

Table 1.2-2 – 2000 and 2025 (forecast) Traffic Volumes

LOCATION	AADT*	2000		AADT*	2025	
		AM PEAK HOUR	PM PEAK HOUR		AM PEAK HOUR	PM PEAK HOUR
<i>Eastbound I-80</i>						
SR 4 and Willow Ave.	77,000	5,100	5,900	94,000	5,400	7,600
<i>Westbound I-80</i>						
SR 4 and Willow Ave.	82,000	5,700	5,200	98,000	8,600	6,600
Total Both Directions	159,000	10,800	11,100	192,000	14,000	14,200
Percent Increase				21%	30%	28%

*Annual Average Daily Traffic

The traffic volume increases projected for this segment of I-80 are consistent with other projections that forecast increases in population, employment, and commuter trips.

1.3.2 Safety Improvements

The following accident data is for the period January 1, 1999 through December 31, 2001. Table 1.2-3 shows the frequency of fatal (FAT) and fatal plus injury (F+I) accidents per million vehicle kilometers (MVK). Table 1.2-3 also shows the type and number of accidents during this same time period.

Table 1.2-3 – Accident Data

LOCATION	ACTUAL (MVK)			STATEWIDE AVERAGE (MVK)		
	FAT	F+I	Total	FAT	F+I	Total
KP 16.1/22.9	0.002	0.41	1.33	0.012	0.31	0.90

Legend:

MVK million vehicle kilometers

FAT frequency of fatal

F+I fatal plus injury

<u>TYPE OF ACCIDENT</u>	<u>NUMBER</u>
Rear-end	451
Hit object	103
Sideswipe	91
Overturn	14
Broadside	7
Other	15
Total	681
Accidents involving fatality	1
Accidents involving injury	347

Accident data indicate that this segment of the I-80 corridor has less than the average fatal and more than average fatal plus injury accidents rates for similar highway facilities.

The forecast referenced above establish the need to add capacity to this facility to accommodate future travel demands. As populations increase in suburban areas, there is also an increase in long distance commuting since the majority of new employment will remain within the urban core. The characteristics of this growth pattern suggest increased congestion, prolonged travel times, and more accidents.

1.4 Project Background

Congestion is projected to extend beyond SR 4 to the Carquinez Bridge. Contra Costa County and the MTC have asked Caltrans to sponsor this project. The project has been identified as a candidate for the Interregional Improvement Program (IIP) element of the proposed 1998 State Transportation Improvement Plan (STIP) Amendment.

Estimated current project costs (in millions) are as follows:

• Federal and state agencies (Interregional Improvement Program):	\$25
• Local agencies (Regional Transportation Improvement Program):	\$5
• Environmental (California Transportation Commission):	\$6.5
• Eastbound construction (funding pending):	\$41
Total	\$77.5

The total project cost is estimated at approximately \$77.5 million. Westbound construction is scheduled to begin in the fall of 2003 and be completed in the summer of 2005. Eastbound construction will begin after construction funding is secure (the project is being proposed and a candidate for the 2004 STIP).

The project is supported by various local agencies, including Contra Costa County, the MTC, and I-80 corridor cities (i.e., Hercules, Vallejo):

- The project is included in Contra Costa County's I-80 Corridor Management Plan dated July 1998.
- The Interstate 80 Corridor Study" prepared by MTC, recommends that HOV lanes be constructed on this segment of the I-80 corridor.
- The I-80 HOV/Transit Productivity Committee, comprising representatives from every city along the I-80 corridor, transit and ridesharing agencies, California Highway Patrol (CHP), MTC and Caltrans, supported the HOV lanes proposed in this project.
- The 1998 I-80 Corridor Management Plan listed key objectives of the MTC and Contra Costa Transportation Authority (CCTA). The MTC supported the construction of HOV lanes for express buses, carpools, and vanpools to accommodate long distance commuting to the urban core. The CCTA has supported the construction of an HOV lane system that would promote ridesharing and transit use.

1.4.1 Transportation Projects Planned, Under Construction, or Completed

A number of transportation projects are completed, under construction, or planned within or adjacent to the project area. The proposed project does not conflict with any of these projects, and in fact is consistent with the regional effort to reduce congestion and improve the transportation system.

Completed or under construction projects within the vicinity of, or adjacent to, this project include the following:

A. Carquinez Bridge replacement and HOV lane (westbound direction):

The Carquinez Bridge Replacement/HOV Project is currently being constructed by Caltrans. Phase I involves the replacement of the west structure of the Carquinez Bridge (3 mixed-flow lanes + 1 HOV lane), and the construction of a westbound HOV lane from SR 29 to the south end of the Carquinez Bridge. Phase II involves extending the HOV lane from the south end of the bridge to just south of the Cummings Skyway Interchange, and rebuilding the Crockett Interchange on the west side of the freeway. The project is scheduled to be completed by the summer of 2003.

B. Extension of the Cummings Skyway Interchange (west side):

Contra Costa County Department of Public Works completed a project in 1998 to extend Cummings Skyway west of I-80 to San Pablo Avenue. This project involved pavement reconstruction on the west side of the I-80/Cummings Skyway Interchange, ramp modifications,

new roadway construction to San Pablo Avenue, and traffic signal modifications at the intersection of Cummings Skyway and San Pablo Avenue. The State and local agencies shared funding (50 percent each). The project was completed in December 1998 and opened to traffic in January 1999.

C. Completion of I-80 HOV lanes from Pinole Valley Road to SR 4:

The HOV lane in both directions of I-80 between the Pinole Valley Road Undercrossing (KP 14.6; PM 9.1) and the I-80/SR4 Separation (KP 16.1; PM 10.0) was completed in August 1998. Other than the construction of an HOV lane in both directions, this project constructed retaining walls and replaced the Hercules Overhead structure.

D. Upgrade of SR 4 to expressway from I-80 to Cummings Skyway:

The SR 4 (West) Gap Closure Project -Segment 1 involved widening SR 4 to an expressway, and widening the eastbound I-80 to eastbound SR 4 connector, and westbound SR 4 to eastbound I-80 connector. These ramp connectors also required some modification.

E. Completion of concrete median barrier from I-80/SR 4 Separation to Cummings Skyway:

A concrete median barrier was constructed between the I-80/SR 4 Separation and Cummings Skyway Interchange in December 1998.

F. Completion of seismic retrofit for two structures within the project limits

The I-80/SR 4 Separation and Willow Avenue Undercrossing were seismically retrofitted. These structures had seismic improvements completed before 1995.

Projects that are planned include:

1. Hercules Transit Center relocation and expansion: replace existing 211-space park-and-ride lot with four level, 500-space park-and-ride structure on Willow Avenue. The project is scheduled to be complete in 2005.
2. Capitol corridor train station in Hercules: constructions of two platforms, installation of train amenities, construction of three level parking structure, and roadway access to station. The project is scheduled to be complete in 2005.
3. Richmond Parkway Transit Center, Phase 1: includes signal reconfiguration/timing, ingress/egress, 700-space parking facility, and security improvements. The project is scheduled to be complete in 2006.
4. AC Transit enhanced bus service in San Pablo Avenue corridor: includes new passenger stations, roadway geometric improvements, and information kiosks. The project is scheduled to be complete in 2008.

1.5 System Planning

The initial planning studies used for this report were 20-year forecasts made in Caltrans' Route Concept Reports and System Management Plan. The 1985 Route Concept Report (RCR) projected that the I-80 corridor be improved to a 12-14 foot lane facility starting from the Alameda/Contra Costa County line to the Carquinez Bridge. This forecast in the RCR was based upon the assumption that west Contra Costa County would experience a 20 percent growth rate, especially in suburban communities. Projections by ABAG and MTC indicate that the 20 percent growth rate may be conservative. The 1988 Caltrans District 4 System Management Plan (SMP) recommended that it would not be feasible to add freeway lane capacity to this facility to accommodate projected growth and reduce congestion. The preferred strategy would be to improve freeway operations through the use of Traffic Operation Systems (TOS) and to integrate transportation services. The SMP endorsed the short-term strategy of constructing HOV lanes on I-80.

In 1988, voters approved Regional Measure 1 to finance capital improvements on the Bay Area toll bridges. One of these projects was the replacement of the westbound crossing of the Carquinez Bridge. The design of this new bridge included an HOV lane extending westbound from SR 29/I-80 in Vallejo to Cummings Skyway. Caltrans District 4 Office of Highway Operations prepared two reports regarding the bridge replacement project: 1998 HOV Report-Carquinez Bridge Project and the 1997 Traffic Operations Analysis Report. The HOV Report indicated that HOV users would benefit in time savings from the HOV gap closure. The report also mentioned a growth in suburban communities in Solano County that would increase congestion on I-80 within the project limits.

This proposed HOV lane project (construction of both the westbound and eastbound lanes) has been listed in the Metropolitan Transportation Commissions' Regional Transportation Plan adopted October 28, 1998 as "Priority 2" for funding from the discretionary Track I funds (the States IIP fund). The project is also consistent with the Contra Costa County's I-80 Congestion Management Plan, the Interstate 80 Corridor Study, and the Route Concept Report.

In March 2002, the Contra Costa Transportation Authority (CCTA) passed Resolution #01-17-P which adopted a project list for the 2002 State Transportation Improvement Program (STIP). The Resolution stated that the CCTA authorizes the use of state-issued Grant Anticipation Revenue Vehicle (GARVEE) bonds against the Contra Costa County STIP share to fund the I-80 HOV lane project.

Figure 1-1. Project Location Map

Figure 1-2a. Environmental Resources Map

Figure 1-2b. Environmental Resources Map (Cont.)

Figure 1-2c. Environmental Resources Map (Cont.)

Figure 1-2d. Environmental Resources Map (Cont.)

Figure 1-2e. Environmental Resources Map (Cont.)

Figure 1-2f. Environmental Resources Map (Cont.)

Figure 1-2g. Environmental Resources Map (Cont.)

Chapter 2 Project Alternatives

2.1 Project Alternatives

Final selection of an alternative will not be made until after the full evaluation of environmental impacts, full consideration of public comments, and at the time of approval of the final environmental document.

2.1.1 Alternative 1, HOV Alternative

This alternative proposes to construct on I-80 a westbound HOV lane from Oleum Refinery Road to Route 4 and an eastbound HOV lane from Route 4 to the Carquinez Bridge. This alternative also includes the replacement of the California Street Overcrossing, realignment of the eastbound on- and off-ramps at SR 4 and all the ramps at Willow Avenue, and the addition of HOV bypass lanes on the on- and off-ramps of Willow Avenue and Cummings Skyway. A new eastbound off-ramp at Willow Avenue will be constructed.

Under Alternative 1, the existing freeway including four structures will be widened by 8.1 meters (26.6 feet) beyond the edge of the existing travel way in both the east- and westbound directions in order to provide minimum standard left and right shoulders and four 3.6-meter (12-foot) lanes.

2.1.2 Alternative 2, “No Build” Alternative

Alternative 2, the No Build Alternative, would not implement any of the improvements involved in the project.

2.1.3 Transportation Systems Management

Various transportation system management elements are included as part of Alternative 1:

Closed circuit television (CCTV) camera locations are proposed at:

- SR 4 eastbound on-ramp
- Willow Avenue westbound off-ramp
- Cummings Skyway eastbound on-ramp
- Westbound I-80 west of Cummings Skyway
- Westbound I-80 between the California Street overcrossing and Cummings Skyway
- Westbound I-80 east of California Street overcrossing

Ramp meters and HOV bypass lanes:

All the on-ramps in the project area will have ramp meter hardware installed during project construction. The meters will be operational at a later date. HOV bypass lanes will be added to the on-ramps as part of the proposed project.

2.2 Alternative Considered and Withdrawn

2.2.1 Alternative 3, HOV/Auxiliary Lanes Alternative

This alternative is the same as the HOV Alternative, with the addition of a 3.6-meter (12-foot) auxiliary lane in both directions between SR 4 and Willow Avenue. This alternative was withdrawn, primarily because the auxiliary lane provided no operational improvement. The alternative also increased the cost of the project due to additional excavation and retaining wall height.

Chapter 3 Affected Environment, Environmental Consequences, and Mitigation Measures

This chapter combines a discussion of the environment in which the proposed project is to be built, the potential effects of the proposed project alternatives on that environment, and the measures proposed to mitigate potential impacts. The environmental impacts presented in this Environmental Assessment/Initial Study are based on technical studies conducted for this highway project.

The technical studies prepared for this environmental analysis are listed below and are available for review from the Caltrans North Region Environmental Office at 2389 Gateway Oaks, Suite 100, Sacramento, CA 95833, and the Caltrans District 4 Office at 111 Grand Avenue, Oakland, CA 94612. Please contact Ken Lastufka at 916-274-0586 or ken_lastufka@dot.ca.gov for more information.

- Air Quality Impact Report, May 2002
- Community Impact Assessment, August 2002
- Floodplain Hydraulic Study, July 2002
- Geotechnical Report, 2001
- Initial Site Assessment, January 2002
- Natural Environment Assessment, August 2002
- Negative Historic Property Survey Report, September 2002
- Noise Study Report, July 2002
- Paleontological Resource Assessment, March 2002
- Relocation Impact Memorandum, August 2002
- Traffic Noise Impact Report, May 2002
- Traffic Operations Analysis, April 2002
- Visual Impact Assessment, August 2002
- Water Quality Report, July 2002

Only those studies that found issues of concern for the proposed project are included in the following discussion.

3.1 Air Quality

Caltrans staff completed an air quality study for the project in May 2002. The study is bound separately from this EA/IS.

Caltrans addresses the impact of highway projects on air quality in accordance with the Clean Air Act and its Amendments, the U.S. Environmental Protection Agency (USEPA) Final Regulations (August 1997), NEPA and CEQA. The San Francisco Bay Area Air Basin has not exceeded the national or state standards for carbon monoxide (CO) for several years and is now recognized as an attainment area for CO. The Bay Area is currently designated as an unclassified area under the 8-hour national ozone standard, a non-attainment -unclassified area under the one-hour national ozone standard, and a non-attainment area under the state standards. For particulates (PM₁₀ and PM_{2.5}), the Bay Area is designated as an unclassified area under the national standards and a non-attainment under the state standards. On July 16, 1997 USEPA adopted new national standards for ozone and PM_{2.5}. The designations based on the new standards for ozone and PM_{2.5} have not been made.

3.1.1 Affected Environment

The existing facility consists of a six-lane freeway, (three mixed flow lanes in each direction). Land uses next to the freeway consist primarily of single-family residences and undeveloped land. The project is located within the jurisdiction of the Bay Area Air Quality Management District (BAAQMD).

3.1.2 Operational Impacts

Conformity with State Implementation Plan (SIP)

The San Francisco Bay Area is currently in a transportation conformity lapse. The final environmental document will not be approved until the project is included in an Metropolitan Transportation Commission (MTC) conforming Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP).

Carbon Monoxide (CO)

This air quality analysis utilizes the "Transportation Project-Level Carbon Monoxide Protocol", dated December 1997, prepared by the Institute of Transportation Studies, University of California at Davis. This protocol was approved by MTC in Resolution No. 3075 on June 24, 1998. Use of this protocol was recommended by the Bay Area Interagency Conformity Task Force, which is the interagency consultation group established pursuant to EPA's conformity regulation and the Bay Area's conformity SIP.

Since the Bay Area was designated an attainment area for CO on June 1, 1998, the protocol indicates that an analysis by comparison is appropriate for this project. This involves a

comparison of the proposed facility with existing facilities within the air district. A list of the features to be compared is given on pages 4-6 to 4-7 of the protocol.

For comparison purposes we utilized Route 880 in San Leandro as shown in Table 3.1-1.

Table 3.1-1 – Comparison of Mainline Conditions

	Parameters	Route 80 (Build)	Route 880 (Exist) (from "A" to Davis)
A	Receptor Distance	13.7m (60')	15.2m (50')
B	Roadway Geometry	8 lanes	8 lanes
C	Worse case Meteorology	Coastal Valley	Coastal Valley
D	ADT Volumes	143,000	192,000
E	Hot/Cold Starts	5/1 EB 5/1 WB	5/1 NB 5/1 SB
F	Percent HDG trucks	7.6	8.7
G	8 Hr. Background CO (2002)	2.1 ppm	4.2 ppm

Particulates (PM₁₀ and PM_{2.5})

Since the Bay Area is in attainment for the Federal PM standards, there is no conformity requirement that a localized PM₁₀ hotspot analysis be performed. At this time there is no requirement to PM_{2.5} impacts; nor are there appropriate tools available for analyzing microscale impacts of either PM₁₀ or PM_{2.5}.

Qualitatively, this project will not have adverse effects on microscale particulate levels since actual vehicle emissions of particulates are believed to be small. The project is not located in an agricultural area or an area of frequent snowfall, where particulate levels might be expected to be higher near the roadway.

Conclusion

This proposed project would result in a roadway facility that will be smaller and less congested than comparable facilities within the same Air District. Since the comparable facilities are in an area that meets air quality standards (maintenance area), this project will also meet microscale air quality requirements and will therefore have no significant impact on air quality or cause exceedances of state or federal CO standards.

3.1.3 Construction Phase Impacts

The proposed project would generate air pollutants during construction. Trucks and construction equipment emit hydrocarbons, oxides of nitrogen, carbon monoxide and particulates. Most pollution will consist of wind-blown dust generated by excavation, grading, hauling and various other activities. The impacts from the above activities would vary from day to day as construction progresses. Caltrans Special Provisions and Standard Specifications will include requirements to minimize or eliminate dust through the application of water or dust palliatives.

Caltrans Standard Specifications, a required part of all construction contracts, should effectively reduce and control these temporary construction emissions. The provisions of Caltrans Standard Specifications, Section 7-1.01F, “Air Pollution Control” and Section 10, “Dust Control,” require the contractor to comply with all pertinent rules, regulations, ordinances, and statutes of the local air district.

3.1.4 Mitigation/Avoidance Measures

Caltrans Standard Specifications, required as part of all construction contracts, should effectively reduce and control emission impacts during construction. The provisions of Caltrans Standard Specifications, Section 7-1.01F, Air pollution Control, and Section 10, Dust Control, require the contractor to comply with all pertinent rules, regulations, ordinances, and statutes of the local air district.

3.2 Community Impacts (Social, Economic) and Environmental Justice

Caltrans staff completed a Community Impact Assessment for the project in August 2002. The study is bound separately from this EA/IS.

The proposed project’s western limits are within the incorporated City of Hercules. Immediately to the east is the unincorporated community of Rodeo. The unincorporated community of Crockett is located on the southern side of the Carquinez Strait (Figure 1.1).

3.2.1 Affected Environment

Population

The population of Contra Costa County is between 12 and 14 percent of the total population of the nine county San Francisco Bay Area in the period between 1970 and 2000. The Bay Area’s population reached nearly seven million in 2000; Contra Costa County’s population was 963,000 in 2000.

There were nineteen incorporated cities in Contra Costa County in the year 2000, making up 85 percent of the County's population. A third of the County's population resided in the three largest cities: Concord (124,000), Richmond (101,000), and Antioch (94,000).

Past Population Trends

The Bay Area is the largest metropolitan area in Northern California. It reached a population of over one million residents in 1920 and had a population of 2.6 million in 1950. The 1970 population of the Bay Area was approximately 4.6 million; by 2000, the population had increased to 6.9 million.

Contra Costa County's population grew steadily but modestly in the period from 1860 to 1940, from 5,328 residents to 100,000. Between 1940 and 1950, the County's population tripled, and since 1950 Contra Costa County's population has grown to approximately 963,000.

Solano County's population also surged between 1940 and 1950; it more than doubled, from 49,000 in 1940 to 105,000 in 1950. Of the four communities in the project area – Crockett, Hercules, Rodeo, and Vallejo – Hercules and Vallejo are the only incorporated cities. Incorporated in 1900, Hercules' population did not surpass 400 residents in the city's first 70 years. Between 1970 and 1980, the City's population increased by 5,700 residents: an increase of 2,200 percent. By 2000, Hercules' population was approximately 19,500. The City of Vallejo was incorporated in 1868. Vallejo's population increased by 134 percent in the 1950s, going from 26,000 in 1950 to 60,000 by the end of the decade. Between 1960 and 2000, Vallejo's population continued increased to 118,000.

The California Department of Finance's records for the unincorporated communities of Crockett and Rodeo do not show these communities' populations prior to 1970. However, US Census 2000 data for Crockett indicates that the majority of the housing in this community (930 units) was constructed prior to 1940. In Rodeo, half of the housing stock (1,500 units) was constructed prior to 1970. The most active decade for housing construction in this area was the 1970s, in which 38 percent (1,114 units) of the existing housing stock was constructed. The 2000 population of Crockett and Rodeo was approximately 3,200 and 8,700, respectively.

Population Projections

The Association of Bay Area Governments (ABAG) provides projections of population, jobs, and housing for the counties in the Bay Area. ABAG anticipates that by 2025, Contra Costa County will grow by nearly 30 percent, while Solano County will grow by 45 percent. At the same time, the Bay Area's total growth is expected to increase less than twenty percent.

Age

In 2000, the median age in the State of California was 33.3 years. The median age was higher than the statewide median in all of the communities and counties in the project area. Crockett had the highest median age in 2000: 42.4 years old. Solano County's median age was 33.9.

The communities in the project area generally have similar age distributions. The population of Rodeo is slightly more heavily weighted toward younger residents, compared to the population of Contra Costa County as a whole, while Crockett has a much higher proportion of residents over 60 than the rest of the County.

In the area of California Street, the median ages of residents are slightly higher than in the rest of the Rodeo area. In the block groups to the north of I-80 and west of California Street, the median age is 40 years old, and the proportion of residents ages 65 and over is higher than elsewhere in the project area.

In the block groups to the south of I-80 within three-quarters of a mile of the overcrossing structure¹, 31 percent of the population was made up of residents ages nineteen and younger in the year 2000; this was on par with Rodeo's proportion of residents in this age group. The proportion of elementary school-aged children was lower in this area than in Rodeo as a whole. Children nine years old and younger made up eleven percent of the population near the overcrossing, and made up fifteen percent of the population of Rodeo as a whole in 2000.

Race / Ethnicity

The cities of Hercules and Vallejo have the most racially diverse populations in the project area, with no single race making up a majority of the population. In Hercules, 43 percent of the population was Asian in 2000 and 28 percent was white. In Vallejo, 36 percent of the population was white, and Black/African-American and Asian residents each made up 24 percent of the population. Rodeo's racial composition was very similar to that of Solano County, with white residents making up slightly more than half of the population, Black/African-American and Asian residents each making up 16 percent of the population, and members of other races making up 7 percent of the population.

Crockett's population is much less diverse than that of the other communities in the area, and than Contra Costa and Solano Counties. White residents made up 85 percent of the population in 2000, and Black/African-American and Asian residents each made up 3 percent of the population.

The area west of I-80 adjacent to California Street has a relatively high concentration of white residents. More than 70 percent of the residents in this area were white in 2000. The racial

¹The U.S. Census Block Groups within three-quarters of a mile of the California Street overcrossing of I-80 are: Block Groups 1, 2, and 3 in Tract 3560.01 and Block Group 2 in Tract 3592.03.

composition of the residents to the east of I-80 along California Street was similar to that of Vallejo: no single racial category made up a majority, but white residents made up the largest component, with Asian and Black/African-American residents making up large proportions of the population.

Eighteen percent of the residents of Contra Costa and Solano Counties identified themselves as Hispanic in 2000, much lower than the proportion of Hispanics in California in 2000 (32 percent). Generally, Hispanics made up between 11 and 17 percent of the population of the communities in the project area.

The Census Block Groups adjacent to the I-80/California Street overcrossing reflect the overall proportions of Hispanic residents in the communities in the project area; Hispanics made up between 13 and 19 percent of the population of this area.

3.2.2 Disability Characteristics

The Americans with Disabilities Act (ADA) of 1990 extends the protection of the 1964 Civil Rights Act to the disabled, prohibiting discrimination in public accommodations, transportation and other services.

In California as a whole, 7.5 percent of the population between the ages of 5 and 20 had a disability. Twenty percent of Californians between the ages of 21 and 64 had a disability and 42 percent of Californians 65 and over had a disability. Within the project area, the communities of Rodeo and Crockett had higher proportions of children and teenagers (residents between the ages of 5 and 20) and residents 65 years and older with disabilities than California as a whole.²

Incomes and Poverty

Project area incomes tended to be higher than those in California as a whole in 2000, and poverty rates were lower than the statewide rate of 14.2 percent. In Contra Costa County as a whole, median household income was 34 percent higher than the statewide median. In Hercules, median household income was \$75,000 in 2000: more than 50 percent higher than the statewide median. Median household incomes in Crockett and Vallejo were \$48,500 and \$50,000, respectively. Of the communities in the project area, these two had the lowest median household incomes.

Per capita income among residents of Rodeo and Vallejo were \$21,700, which was lower than the statewide per capita income of \$22,700, but not substantially lower. In Hercules and Crockett, per capita incomes were over \$27,00 in 2000.

² At the time of this report, disability status by Census Tract Block Group was not available. As a result, it is not possible to estimate the proportion of disabled residents in the vicinity of the California Street overcrossing.

Of the communities in the project area, Vallejo had the highest poverty rate in 2000. Vallejo's overall poverty rate was ten percent. Vallejo and Crockett both had relatively high proportions of related children under age 18 in poverty, with a rate of twelve percent in each community. The community with the lowest poverty rate in 2000 was Hercules, with a rate of three percent.

Housing

Vacancy rates in the project area were generally lower than in California as a whole in the year 2000. The Crockett community was the exception, with a vacancy rate of 6.2 percent, compared to the statewide vacancy rate of 5.8 percent. Vacancy rates in the other communities were four percent or under in the year 2000.

The proportion of renter-occupied units was between 30 and 40 percent in the project area at the time of the 2000 Census. The exception was the City of Hercules, where homeownership was relatively high. Rental units made up sixteen percent of the housing stock, compared to 31 percent in Contra Costa County.

Based on housing value data collected at the time of the 2000 U.S. Census, the cost of housing decreases with proximity from the employment centers to the west. The median housing value in Contra Costa County was \$267,800, while in neighboring Solano County the median housing value was \$178,300. In Hercules, where incomes are high (relative to the project area) and vacancy rates are extremely low, the median cost of housing in 2000 was \$241,500. In Rodeo and Crockett, median housing costs were in the \$200,000 range, about five percent lower than the statewide median housing value of \$211,500. At the northern end of the project area, in Vallejo, the median value of housing was lowest: \$166,400.

The median rent in Contra Costa County was \$900, or \$150 higher than the statewide median. The median rent in Solano County was \$797, or \$50 higher than the statewide median. In Hercules the median rent was over \$350 higher than the statewide median rent. In Rodeo and Vallejo the median rent was slightly higher than the statewide median, and the median rent in Crockett was well below the statewide median.

Employment and Unemployment

Regional Context

Contra Costa County is a net exporter of workers, with over 100,000 more workers than jobs in the year 2000. San Francisco, Santa Clara, and Alameda Counties are net importers of workers. In the year 2000, there were 629,000 jobs in San Francisco County, over a million jobs in Santa Clara County, and 725,800 jobs in Alameda County, compared with 360,000 jobs in Contra Costa County.

Project Area

Contra Costa County was home to over 500,000 workers in 2001. Residents in the project area made up less than 4 percent of the total County workforce in 2001; 18,000 workers.

In 2001, unemployment was low in the project area relative to the Bay Area and the rest of the State. Unemployment in California was 5.3 percent, 5.2 percent in San Francisco County, and 4.5 percent in both Alameda and Santa Clara Counties. The 2001 unemployment rate in both Contra Costa County and the Rodeo community was 3.3 percent. In Hercules, the unemployment rates was 2.9 percent, and in Crockett it was 2.4 percent.

Employers

Based on the US Census Bureau's Zip Code Business Patterns data system, there were 275 business establishments in the project area in 1999, with a total of 5,000 employees. Most of the establishments were located in the City of Hercules (136 establishments, with over 2,000 employees). One of the largest employers in Hercules is Bio-Rad Laboratories, an analytical laboratory instrument manufacturing firm with worldwide operations. Other major types of employment in Hercules include commercial banking, accommodation and food services, retail trade, and construction.

In the Rodeo area, the two largest employers in 1999 were a software publisher and a petroleum refinery. The 1,100-acre Phillips 66 petroleum refinery (formerly Tosco) is located east of Rodeo and employs approximately 470 people.

In the Crockett area, the largest employer by far is the California and Hawaiian Sugar Company's sugar refinery, located on the Carquinez Strait.

Means of Transportation to Work

According to Census data, a higher proportion of commuters in Contra Costa County use public transportation than in California as a whole. In Hercules, 8 percent of commuters took public transportation to work, as opposed to 5 percent in California as a whole. Four percent of Rodeo commuters and 2 percent of Crockett commuters used public transit.

Single-occupancy vehicles (SOVs) were the dominant means of transportation to work in 2000. In the project area, residents of Crockett had the greatest tendency to use SOVs to get to work (82 percent), while only 66 percent of Hercules residents used SOVs.

Carpooling was the second most popular means of commuting in California and the project area. Nearly 25 percent of the workers in Hercules carpoled to work, compared to 15 percent of workers statewide. Rodeo also had a relatively high proportion of commuters in carpools: 17 percent.

In 1998, commute times in Crockett were on par with the statewide commute time, with a mean of 28 minutes statewide, and a mean of 30.5 minutes in Crockett. The mean travel time

to work in Rodeo was 33 minutes, while in Hercules it was over 40 minutes. In the Bay Area, the average travel time to work was 27 minutes.

Community Services and Facilities

Schools

Hillcrest Elementary School

Hillcrest Elementary School is located at 601 California Street in Rodeo, approximately 260 meters (850 feet) north of I-80 (Figure 1-2d). Total enrollment during the 1999/2000 school year was 836 students in grade levels kindergarten through fifth. Because the John Swett Unified School District does not include middle or high school facilities in Rodeo, and because the school system does not provide bus service during the summer, Hillcrest School is the location for summer school students in the Rodeo area. Approximately 450 students of all ages attend summer school classes at this school between June 25th and August 5th.

The School District has plans to relocate this school to a different part of the Rodeo community. The site of the relocated school is the old Garretson School on Garretson Avenue, approximately 1.6 kilometers (1 mile) northwest from Hillcrest School. The old Garretson School will be demolished and a new school built in its place. The school district is anticipating the new school will open either in September 2004 or January 2005, depending on the construction progress at the new school site. According to the school district, there would not be summer school in 2004.

St. Patrick School

Other schools in the area include St. Patrick School, located at 825 Seventh Street in Rodeo, and Ohlone Elementary School, located at 16165 Pheasant Drive in Hercules. Neither school will be affected by the project.

Durham Transportation

The John Swett Unified School District contracts with Durham Transportation, located in Crockett, to provide bus service to its 2,000 students during the regular school year. Because the School District's middle and high schools are located in Crockett, Durham Transportation makes multiple runs between the Rodeo and Crockett communities daily.

In the project area, there are several scheduled bus stops in the Rodeo and Crockett communities. This includes a stop at the intersection of Hawthorne and California Streets, west of I-80, at which there were five scheduled pickups daily during the 2000/2001 school year: two for students of Carquinez Middle School (at 7:10 and 8:17 AM), two for students of John Swett High School (at 6:22 and 7:19 AM), and one for Willow High School students (at 8:30 AM).

Additionally, because kindergarten students are on a half-day schedule in this school district, buses run at the middle of the day to drop off and pick up kindergarten students.

Durham Transportation also provides services for students returning from school to home, but with fewer return trips.

Parks and Recreation

Private Park

A privately-owned linear park runs between homes in the Viewpoint subdivision and the I-80 right of way property fence. The park is unpaved and fenced off from adjacent homes. A sign at the entrance to the park identifies it as the private property of the View Park Homeowner's Association.

Rodeo Creek Trail

Contra Costa County and the Contra Costa County Flood Control District own and maintain a two and-a-half mile trail along Rodeo Creek in the Rodeo/Hercules area. This trail includes a picnic area near the I-80/Willow Avenue interchange east of I-80. There is a wooden pedestrian crossing of Rodeo Creek at this site. The Rodeo Creek Trail is accessed by way of the sidewalks along Willow Avenue under I-80 in the project area.

Park and Ride Lots

As the Contra Costa County 1996 General Plan points out, park and ride lots help to encourage transit use and carpooling. BART operates twelve lots with more than 11,800 free parking spaces for riders of BART trains. Caltrans operates thirteen park and ride lots in the County, providing more than 660 spaces. These spaces are primarily used as staging areas for car and vanpools.

Caltrans operates two park and ride lots in the project area located at the I-80/Willow Avenue interchange in Rodeo. The lot on the western side of I-80 has approximately 45 parking spaces. The lot on the eastern side of I-80 has approximately 40 parking spaces. On-site observations indicate that the eastern lot is more heavily utilized than the lot to the west. According to 2001 Park and Ride Lot field inventory data collected by the Caltrans Park and Ride Lot Unit, an average of about 40 of the total 85 parking spaces in these two lots are used on a daily basis.

3.2.3 Impacts

Population

Residential Displacements

The proposed project would result in the relocation of two residential properties located near the California Street overcrossing of I-80. Relocation assistance payments and counseling will be provided to displaced persons in accordance with the Federal Uniform Relocation

Assistance and Real Properties Acquisition Policies Act, as Amended, to ensure adequate relocation and a decent, safe, and sanitary home for displaced residents. All eligible displacees will be entitled to moving expenses. All benefits and services will be provided equitably to all residential and business relocatees without regard to race, color, religion, age, national origins and disability as specified under Title VI of the Civil Rights Act of 1964.

The Federal Uniform Relocation Assistance Act of 1970 (as amended) and the California Relocation Assistance Act (Govt. Code Section 7260 et seq.) both require that, within a reasonable period of time prior to displacement, comparable replacement housing will be available or provided for each displaced person.

The acquisition of two residences in the project area is not expected to have a significant impact on the housing market in this area. The removal of two residential properties from the Contra Costa County property tax base would not have any perceptible impact on the County's fiscal condition or ability to provide services.

Community Cohesion

The proposed project would require the temporary closure of the California Street overcrossing of I-80. This overcrossing is one of the few points of access between the Viewpoint residential subdivision and the portion of Rodeo referred to as "Old Rodeo" (west of I-80). While this would temporarily sever a link between two portions of the Rodeo community, it would not be likely to permanently alter how the residents of this area interact with one another. Currently, I-80 is a physical barrier between these sides of the community and defines neighborhoods in this area.

Because the proposed project is located along the route of existing I-80, it would not be likely to result in a disruption to community cohesion.

Property/Housing Values

Property values for residences in the vicinity of any major expressway are generally negatively affected by highway traffic noise but positively affected by their proximity to freeway access.

The proposed project is located adjacent to an existing freeway, which is both a source of noise and the primary means of accessing other job opportunities and other parts of this region. Soundwalls at several locations are proposed for this project (see Section 3.8). The project would not sufficiently increase noise levels or improve accessibility to result in noticeable changes in property or housing values in this area.

Employment and Unemployment

The proposed project will not involve any business displacements. The project will not permanently alter business patterns in this area. Project construction will involve temporary

ramp closures at all of the interchanges in the project area, which would have some temporary impact on businesses in this area, particularly retail businesses catering to highway traffic. A separate “Ramp Closure Study” is included in the Community Impact Assessment (bound separately). The temporary closure of the California Street overcrossing would not be likely to perceptibly impact businesses in this area because it is in a residential area.

Regional Economic Impacts

The proposed project would provide an improvement in travel times to work, particularly for workers following the dominant commuting pattern in this region (traveling to jobs in San Francisco, Santa Clara, and Alameda Counties from areas located east of these counties along I-80).

3.2.4 Temporary Impacts

California Street Overcrossing Structure

According to the current project schedule, the California Street overcrossing of I-80 would be closed for approximately six months while the structure is demolished and replaced.

School District

Regardless if the school is moved to the old Garretson School on Garretson Avenue in September 2004 or January 2005, the replacement of the California Street overcrossing would affect students in the Viewpoint area during the spring of 2004 (there would be no summer school in 2004). The demolition and reconstruction of the overcrossing is scheduled to begin in the spring of 2004 and should be completed within 6 months.

Hillcrest Elementary School is currently being used for classes both during the regular school year and for summer school classes. Closure of the California Street overcrossing would limit access for students located in the Viewpoint area who are likely to walk to school. A student living near the intersection of Springwood and California Streets would walk approximately one-third of a mile to the Hillcrest School. During the closure of California Street, this walk would be increased to approximately 2.5 miles. This is considered a temporary significant impact. However, mitigation will reduce the impact to less-than-significant. Please refer to Section 3.2.6 for a list of mitigation measures.

Additionally, if the proposed closure overlaps with the regular school year in this school district (between the first week in September and the second week in June, approximately), the closure would likely interfere with the routing of Durham Transportation’s student transportation system. Re-routing is likely to result in an increase in transportation costs to the John Swett Unified School District. This is considered a temporary significant impact. However, Caltrans would either compensate the John Swett Unified School District for increased transportation costs to Durham Transportation as a result of re-routing required by

the proposed closure or negotiate directly with Durham Transportation. This will render the impact to less-than-significant.

Crockett Junior High School students in the area are currently picked-up near the corner of California Street and Hawthorne Drive. Junior high students from the Viewpoint area that use this service would be affected. Caltrans will coordinate with the transportation provider to add another pick-up location within the Viewpoint area, possibly near the corner of California Street and Springwood Street. This will render the impact to less-than-significant.

Because no transportation is provided by the school district during the summer school period, impacts as a result of the street closure would be limited to students who walk or bike to the Hillcrest School using the California Street from areas east of I-80. However, because the structure would be down during one summer session and that the actual number of students using California Street is limited, this is considered a less-than-significant impact. Caltrans will coordinate with the transportation provider that currently picks up junior high school students at the corner of California Street and Hawthorne Drive to Caltrans will add another pick-up locations within the Viewpoint area, possibly near the corner of California Street and Springwood Street.

Accessibility

California Street is not a major arterial in this area. It generally serves as a secondary connection between the portions of Rodeo separated by I-80. Temporary closure of the overcrossing structure would have an adverse impact on accessibility within the Rodeo community. Because alternate routes are available, this closure would not likely have a significant adverse impact on accessibility. Peak hour traffic on California Street has been estimated at less than 300 vehicles.

Emergency Access

The temporary closure of California Street would have an adverse impact on accessibility through the Rodeo community for emergency vehicles.

Detours

The proposed detour along San Pablo, Parker, and Willow Avenues would temporarily adversely impact both residents of Rodeo and users of I-80. Rodeo residents would be inconvenienced by an increase in traffic on San Pablo and Willow Avenues. The detour would result in greater noise and headlight disturbance to the community along the detour route during normally undisturbed hours. The detour would also mean additional driving time for drivers on I-80, on the order of five to seven minutes. Because these impacts are temporary and would occur during the period of lowest vehicle volume, they are not likely to significantly disrupt lifestyles or social patterns or activities for either residents or drivers of detoured vehicles.

The proposed detour would not be likely to impact most economic activity in the project area, since the detour is proposed outside of normal business hours. Minimal impact would be expected to normal I-80 users, such as delivery trucks.

Contra Costa County is planning the Parker Avenue Undergrounding and Reconstruction Project in 2003. The project, located along a one-mile segment of San Pablo/Parker Avenue between California Avenue and 7th Street, involves the undergrounding existing overhead utilities, reconstructing the existing roadway, and adding frontage improvements (curbs, gutters, sidewalks). The project is scheduled to begin in the spring of 2003 and end late 2004 or early 2005. All construction will occur during the day. The county project will not conflict with the Interstate 80 HOV project since the detours necessary for the temporary closure of California Street will not occur until the spring of 2005.

Rodeo Creek Trail

The proposed project would not impact the picnic area adjacent to the Willow Avenue interchange.

The proposed project includes some reconstruction of the on- and off-ramps at the I-80/Willow Avenue interchange. The sidewalk along Willow Avenue and under I-80, which is used to access each segment of Rodeo Creek Trail, will not be closed or blocked except possibly during some phases of construction. These temporary closures will occur rarely and be of short duration (under 30 minutes). A flagman will control pedestrian traffic. This is not expected to substantially alter use of the trail. The Special District Coordinator for Contra Costa County Public Works stated that the proposed project would not adversely affect the Rodeo Creek Trail (Epperly 2002). No impacts to the Rodeo Creek Trail are anticipated. The project does not affect any Section 4(f) resource as defined by 23 CFR 771.135.

Park and Ride Lots

The proposed project includes work at and adjacent to the I-80/Willow Avenue interchange. Reconstruction of the off-ramp from eastbound I-80 to Willow Avenue would require the relocation of one of the two driveways to the park and ride lot on the eastern side of I-80. This would not be a significant impact.

The project may also result in the loss of approximately five parking spaces at these lots. Based on existing usage rates, this is not considered a significant adverse impact.

3.2.5 Title VI and Environmental Justice

Title VI of the Civil Rights Act of 1964, and related statutes, requires there be no discrimination in Federally-assisted programs on the basis of race, color, national origin, age, sex, or disability.

This project has been developed in accordance with the Civil Rights Act of 1964, as amended, and Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.” The Executive Order requires each Federal agency (or its designee) to take the appropriate and necessary steps to identify and address ‘disproportionately high and adverse’ effects of federal projects on minority and low-income populations.

Minority and Low-Income Populations

The communities in the project area are extremely diverse, with nonwhite residents making up a majority of the population in Hercules, and 40 percent of the population in the Rodeo community.

There are no known low-income populations or neighborhoods adjacent to the project area. Data indicate that incomes in Hercules, Rodeo, and Crockett are generally either on par with or well above those in California as a whole. Poverty rates are well below the statewide rate.

For purposes of environmental justice, the City of Hercules and the Rodeo community, generally, are considered to be home to minority populations. Because the majority of the project area is included within the boundaries of these communities, the project would disproportionately affect minority populations, both in the form of adverse project impacts and in the provision of project benefits.

Adverse Impacts

Residential Displacements

The two anticipated residential displacements would constitute an adverse impact to the Rodeo community.

The two anticipated relocations occur within a portion of Rodeo that is much less diverse than the rest of the community, according to the 2000 US Census. Seventy percent of the residents of the block group to the north and west of the California Street overcrossing of I-80 were white in 2000.

Displaced residents would be provided with decent, safe, and sanitary housing comparable to their current residences and will be entitled to moving expenses.

Ramp Closures

Anticipated ramp closures could have a potential adverse impact on residents and businesses in the Hercules and Rodeo communities. These closures could have some potential adverse impact on the entire traveling public utilizing this portion of I-80, since they would alter travel patterns for anyone wishing to exit or enter the freeway in this area. However, these impacts are temporary, and are not considered significant.

Caltrans will be preparing a Traffic Management Plan to stage these ramp closures in order to minimize the degree to which they interrupt travel and business patterns.

Project Benefits

The proposed project would provide the greatest benefit to regular, peak-hour users of this roadway. Residents of the project area would benefit in the form of reduced trip times during morning and evening commutes between the project area and destinations to the west, such as San Francisco.

Median commute time in Hercules in 2000 was 40 minutes and in Rodeo was 33 minutes. These commute times and traffic data for this area suggest that many residents of these communities use I-80 on a daily basis to reach jobs in cities located west along I-80.

Conclusion

The impacts of the proposed project are not likely to have a permanent adverse impact on the communities in this area. The project is likely to provide a long-term benefit to residents of Rodeo and Hercules in the form of improved traffic conditions during peak commuting hours.

The proposed project will not cause disproportionately high and adverse effects on any minority or low-income populations, as discussed in Executive Order 12898 regarding environmental justice.

3.2.6 Mitigation/Avoidance Measures

Demolition of California Street Overcrossing

The proposed project will include the provision of shuttle bus service between the Viewpoint Subdivision and Hillcrest School, with pickup points and times to be agreed upon by Caltrans, the Rodeo Municipal Advisory Council, and the John Swett Unified School District. A second set of pickup points and times may be required in order to accommodate summer school students.

Caltrans will compensate the John Swett Unified School District for increased transportation costs to Durham Transportation as a result of re-routing required by the proposed closure. Caltrans will agree upon a reimbursement rate by meeting with the School District and representatives of Durham Transportation.

Caltrans will coordinate with the transportation provider that currently picks up junior high school students at the corner of California Street and Hawthorne Drive to add other pick-up locations within the Viewpoint area, possibly near the corner of California Street and Springwood Street.

Caltrans will continue to consult and coordinate with the John Swett Unified School District and Hillcrest Elementary School regarding issues and concerns related to the temporary closure of the California Street overcrossing.

Park and Ride Lot

The proposed project will include realigning the existing driveways to the two park and ride lots on Willow Avenue near I-80. During on-ramp reconstruction at the lot on the eastern side of I-80, signs will direct users to the lot available on the western side of I-80.

3.3 Cultural Resources

Caltrans staff completed a Negative Historic Property Survey Report (NHP SR) for the project in September 2002. The NHP SR and attendant technical documentation is bound separately from this EA/IS.

3.3.1 Affected Environment

The project area traverses the suburban and urban-industrial hills and drainages adjacent to the San Francisco Bay. The elevation of the project area ranges between approximately 30 and 70 meters (100-200 feet) above mean sea level. This portion of I-80 was first constructed in 1957-58. Much of the current project area has been subjected to a high degree of prior cut and fill earthwork, as well as grading and landscaping. The surrounding area is generally heavily developed except for portions of oil refinery lands, which remain relatively open.

The project area lies within the ethnographic territory attributed to the Costanoans. The name Costanoan refers to the language group spoken by the inhabitants of this general area. In the late eighteenth century, eight distinct languages were identified among the Costanoan-speaking peoples (Levy 1978). The ethnic groups affiliated with each of these eight languages consisted of tribelets or sets of tribelets who spoke a common language and lived in a contiguous geographic area. The proposed project falls within the geographic territory of the ethnic/language group known as the Karkin. Located on the southern edge of the Carquinez Strait, the Karkin speakers are said to have been composed of a single tribelet of approximately 200 people (Levy 1978).

Area of Potential Effects

The Area of Potential Effects (APE) was established in consultation with the FHWA Area Engineer, Mafoud Licha, on September 26, 2002. The delineation of the archaeological APE is intended to encompass the maximum limit of any potential physical disturbances that may result from activities associated with the proposed project, including the proposed new right of way and temporary construction easement near California Street. The APE varies in width throughout the project corridor, ranging from a minimum of 1.5 meters (5 feet) to a maximum

of 271 meters (890 feet) from either side the highway centerline, averaging approximately 83 meters (275 feet) from centerline.

It is important to note that a vertical dimension to the project's APE has been defined, particularly as it relates to work being conducted between KP 18.5 and 18.8 (PM 11.5 and 11.7) on the south (eastbound) side of I-80. The work proposed in this area will entail the placement of a retaining wall along the top of the existing highway embankment, which is composed of a substantial amount of imported fill (as evidenced on the 1957 as-built plans). The vertical dimension of the APE at this location is, therefore, defined as a depth no greater than the existing fill, which ranges from 3.6 to 24.4 meters (12 to 80 feet) deep. The retaining wall will be placed at this location approximately 0.6 meters (2 feet) out from the existing edge-of-pavement and will be placed into the fill at a depth no greater than 1.06 meters (3.5 feet). All work will take place within the limits of this imported fill only. No work will occur within the original ground surface below the base of the fill, and construction will occur from the roadway (top-down construction).

3.3.2 Impacts

No cultural resources were identified within the limits of the project's APE. Additional cultural resource studies will be required if project plans change to include areas not included in the existing APE, as defined above. Should any buried cultural materials be encountered during construction, it is Department policy (Environmental Handbook, Volume II, Chapter 1) to cease all work in location of the discovery until a qualified archaeologist can evaluate the nature and significance of the materials.

3.4 Geology/Soils/Seismicity

Caltrans staff completed a geotechnical study for the project in September 2002. The study is bound separately from this EA/IS.

3.4.1 Affected Environment

Topography

Contra Costa County consists of four distinct physiographic regions: the Coast Range, the intermountain valleys, the San Francisco Bay region, and the Sacramento-San Joaquin Delta. Elevations range from sea level to 1,173 meters (3,849 feet) at the top of Mount Diablo. Rolling hills and valleys of the Coast Range trend northwest with the most dominant feature being Mount Diablo. Valleys are generally young and V-shaped. The two largest valleys in the county, San Ramon and Ygnacio, separate the East Bay Hills in the western part of the county from Mount Diablo to the east. The San Francisco Bay borders the western-most edge of the county, while San Pablo and Suisun Bays frame the northern-county border and give way to the Sacramento-San Joaquin Delta to the east.

Regional Geology

The project area is within the Coast Range Geomorphic province, a region along the coast of California containing faulted and folded marine sedimentary rocks as well as units of the Franciscan Complex. In Contra Costa County, the East Bay Hills and Diablo Range comprise Coast Range rocks. Situated between the Hayward fault and the Calaveras fault, the East Bay Hills trend roughly northwest from San Pablo Bay south to Fremont. Rock types include Jurassic gabbroic rocks along the Hayward fault, Tertiary marine rocks in northern Contra Costa County, and Miocene volcanic rocks in the Berkeley Hills. Compressional forces, both regional and local, have created gently rolling hills and narrow stream valleys that parallel the northwest regional trend. Faults are generally strike-slip, but much of the topography has been formed by transpressional forces, where compression and shortening are ongoing between large regional strike-slip faults. Surficial sediments consist of colluvium and alluvium in stream valleys as well as fan deposits and tidal sediments near the San Francisco Bay.

Site Geology

Interstate 80 through the project site runs perpendicular to the geologic units. A moderate size, open syncline (a trough of stratified rock in which the beds dip toward each other from either side) comprises the majority of the project area and contains four different units: the Hercules shale member of the Briones Formation, the Upper Briones Formation sandstone, the Cierbo Formation sandstone, and the Neroly Formation sandstone. Beyond the syncline to the north, I-80 crosses the Franklin Canyon fault, a potentially active, high-angle reverse fault that has placed Cretaceous Great Valley Sequence rocks above the Tertiary Upper Briones sandstone (see below).

Soils

Soil survey data were collected from the Soil Survey of Contra Costa County (1977, USDA Soil Conservation Service). Soil types within the project area include Urban Land, Made Land, Cut and Fill Land-Los Osos Complex, Los Gatos Loam, Sehorn Clay, and Cropley Clay. In general, soils throughout the project area are poorly developed due to the steepness of the cut slopes. Soils developed above benches are thin residual soils and weathered rock. Erosion is generally controlled by rock type, with the softer sands found on the southwestern end of the project being more erodible than harder rocks found elsewhere within the project limits.

Seismicity

The San Francisco Bay Area is one of the more seismically active regions in California. The project is located within the seismically active San Andreas fault system. The San Andreas fault system is a series of active faults, those that have shown movement in the last 11,000 years. The fault system separates the North American plate on the east from the Pacific plate on the west. The active faults within the system have a northwest trend and are designated as

Alquist-Priolo Special Studies Zones by the California Division of Mines and Geology. Five active faults located near the project are capable of producing a major seismic event that could affect the project. These faults are the San Andreas, Hayward, Calaveras, Rogers Creek, Marsh Creek-Greenville and Concord-Green Valley. Active faults are those with most recent movement in the past 11,000 years. In addition to these active faults, the nearby Franklin fault is potentially active and capable of producing an earthquake that can affect the project. Potentially active faults are those with most recent movement in the Quaternary period, 2 to 3 million years ago. The west to southwest trending dip-slip faults in the area may not be seismogenic. They probably rupture sympathetically during large earthquakes on nearby strike-slip faults of the San Andreas fault system.

The potentially active Franklin fault crosses the western end of the project area near Crockett. There is no record of seismic activity during historic times and the fault is not within an Alquist-Priolo Special Studies Zone. It is a northeast dipping reverse fault that juxtaposes Cretaceous Great Valley rocks on the east against younger Miocene marine deposits. The nearest active fault, the Concord-Green Valley fault, is 2.6 km (1.6 miles) northeast of the project. It is capable of a maximum earthquake with a moment magnitude (M_w) of 6.9. The active Marsh Creek-Greenville fault is 19.3 km (12 miles) to the southeast. It is also capable of a maximum earthquake of 6.9 (M_w). Other major faults within 50 km (31 miles) of the site and capable of maximum earthquakes of magnitude 7.0 or greater are the Hayward fault, the Calaveras fault, the Rogers Creek fault, and the San Andreas fault.

Slope Stability

Natural slopes in and around the project area are shallow and typically vegetated with wild grasses and shrubs. Landsliding is confined to the existing cut slopes within the "Big Cut" area. The "Big Cut" was made in 1958 as part of the original I-80 construction. The "Big Cut" has cut slopes ranging from less than 1 meter (3 feet) to as high as 60 to 70 meters (195 to 230 feet), constructed with mid-slope benches every 15 meters (50 feet) and with a slope inclination of 1:2 (vertical:horizontal). The cut slope section is approximately 800 meters (2,625 feet) long. A review of historical aerial photographs shows that, with the exception of the area near the Franklin fault, cut-slopes and embankment slopes have been relatively free of deep-seated slide activity.

Sign of sloughing and shallow slide/instability are evident along the entire cut slope areas within the project limits, particularly on the slope area below the intermediate bench levels. Cleaning the sloughed debris and maintaining the slope particularly during and immediately following rainy seasons have been routine practice for maintenance. One slide area located beside the westbound SR-4 to eastbound I-80 was recently repaired with rock slope protection.

During investigations, there was no evidence of large-scale global failures along either cut-slopes or embankments. In the vicinity of the Franklin fault, several smaller slides have

occurred along the cut-slope. One of these occurred in January 1995 when a slide involving about 191 cubic meters (250 cubic yards) of material occurred on the eastern side of I-80. The area was repaired the following year by removing the slide material and replacing it with compacted fill. This failure occurred above one of the upper benches in the cut-slope and did not reach the traveled way. In the southern end of the project area, softer sediments of the Briones Formation show a high potential for erosion and are the weakest units to be expected during construction.

3.4.2 Impacts

Soil Stability and Settlement

Based on the results of the geotechnical study, the proposed project is feasible from the geological and geotechnical engineering standpoint. Retaining walls and cuts/fills are required to accommodate the proposed widening. The first retaining wall (152 meters (500 feet) long) is located along eastbound I-80 next to the eastbound on-ramp of SR 4. The second retaining wall (640 meters (2,100 feet) long) is located in the eastbound direction between SR 4 and Willow Avenue Interchange. The third retaining wall extends approximately 260 meters (850 feet) from the eastbound Willow Avenue on-ramp. The last retaining wall is located in the westbound direction between SR 4 and Willow Avenue Interchange and is approximately 457 meters (1,500 feet) long. All retaining walls are approximately 8.5 meters (27.9 feet) in height. All the retaining walls will provide slope stability.

Seismicity

The potential for ground rupture throughout the project area is considered low. No known active faults cross proposed structures; however, in an area of active seismicity the possibility that a blind fault exists at depth cannot be dismissed. In addition, the Franklin fault, while not historically active, has been recognized as a potential seismic source and its trace can be seen within the project limits. Currently, no structures are proposed for this area. Rigid structures should be avoided where traces of the Franklin fault are present.

Soils

Cuts made for the construction of soil nail walls will expose open cuts temporarily, construction roads will need to be constructed. Standard measures used during construction to minimize erosion will be used.

Design of soil nail walls has incorporated global stability analyses to minimize landslide potential both on and off the State's right-of-way. Local stability analyses have been used to minimize overturning and lateral spreading potential. This project will not result in additional ground instability, either on or off of the State's right-of-way.

Slope Stability

Slopes throughout the project limits are prone to small slumps and slides. The project proposes to build retaining walls to accommodate widening. The retaining walls will be designed to mitigate landslides.

3.4.3 Mitigation/Avoidance Measures

At the early stage of this project, Caltrans Geotechnical Design West- Branch A provided the following guidelines for the wall and cut/fill sections along the proposed roadway widening. These guidelines were based on our initial geotechnical studies and constructibility issues. They have been developed to minimize the environmental and construction impacts:

- Use soil nail wall type for the widening segments located along the existing cut slopes between SR-4 and Willow Avenue and the eastbound segments between Willow Avenue and California Street. In addition, several options were considered for the wall locations on the existing cut slope and pro and cons of these options were discussed.
- Generally, use standard retaining wall type on the side slopes of the embankments instead of placing sliver fill against the existing roadway embankments to minimize adverse environmental impact, the ground settlement/movement and slope instability, earthwork volume, and impact on the existing embankment and traffic. Otherwise, place the compact fill against the prepared existing embankment side slopes.

All project facilities will be designed and constructed to account for site-specific soils conditions and potential geological hazards. No additional mitigation measures are proposed.

3.5 Hazardous Waste/Materials

3.5.1 Affected Environment

Caltrans staff completed an Initial Site Assessment for the project in January 2002. The study is bound separately from this EA/IS.

3.5.2 Impacts

The initial site assessment involved a review of:

- Caltrans photo log
- Local, state and federal databases (including the Cortese List) through a VISTA report
- Geologic Map of the Santa Rosa Quadrangle, California Department of Conservation, Division of Mines and Geology

Based on this review, the potential for hazardous waste exists with respect to hydrocarbon and lead contaminated soils. Historically, lead additives were placed in gasoline. Combustion of gasoline with lead additives resulted in lead particulates, Aerially Deposited Lead (ADL), that over time has accumulated along the State highway system. Testing of ADL in project soil is continuing. Depending upon the results of the tests, ADL-contaminated soil will be removed or allowed to be used as fill within the project limits.

An asbestos and lead based paint survey of affected bridge structures was completed. No asbestos was discovered. Lead based paint was discovered on bridge railings. This paint will be removed and disposed of during the construction phase of the project.

Yellow traffic stripes in the existing portion of the roadway may contain heavy metals, such as lead and chromium. These heavy metals may exceed hazardous waste thresholds established by the California Code of Regulations (CCR) and may produce toxic fumes when heated. These yellow traffic stripe material will be removed and be disposed of at a Class 1 disposal facility.

Since construction of the proposed projects cannot avoid disturbing suspect materials, a Preliminary Site Investigation (PSI) is required. A PSI takes 3 to 6 months to complete since a task order has to be prepared, approved, and issued to a contractor. The contractor is then required to obtain encroachment permits, prepare workplans, health and safety plans, conduct site investigations, and prepare site investigation reports for Caltrans review and approval.

3.5.3 Mitigation/Avoidance Measures

The following mitigation measures for hazardous waste/materials are proposed:

- Remove lead based paint on bridge structures and yellow traffic stripes. Dispose of material at a Class 1 disposal facility.
- Depending upon the results of soil testing, remove or re-use within the project limits any ADL-contaminated soil.

3.6 Hydrology, Water Quality, Stormwater Runoff

Caltrans staff completed a hydraulic study for the project in July 2002. The study is bound separately from this EA/IS.

Several federal, state, and local agencies have jurisdiction over the project site. Important agencies and statutory authorities relevant to water quality as it relates to this project include:

Clean Water Act

- Section 401
- Section 402
- Section 404

State Water Resources Control Board and Regional Water Quality Control Board

- NPDES Program (Caltrans Statewide NPDES Storm Water Permit [Order No. 99-06-DWQ], adopted July 15, 1999)
- NPDES General Permit, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction Activities (Order No. 99-08-DWQ)

3.6.1 Affected Environment

The land within the project area is privately owned and highly developed and urbanized. The climate is temperate and Mediterranean, resulting in dry, warm summers and cool, moist to wet winters. The average annual rainfall in the area is about 6.25 centimeters (25 inches) and falls mostly from December through April. The mean annual temperature is 14 degrees Celsius (58 degrees Fahrenheit).

Like most of the Coastal Range, the geologic picture of San Pablo Bay watershed is complex. Most of the watershed is composed of a melange of rock units from different sources and different ages. The entire San Pablo Bay and near-shore area is covered by Bay mud. Bay mud is a soft, compressible deposit of silt, clay, and peat interspersed with fine-grained sand and gravel lenses. Soils in the flood plains, low terraces, and alluvial fans comprise loams, silt loams, clay loams, and sandy loams that range from poorly drained to well drained.

The San Pablo Bay watershed is part of the San Francisco Bay-Delta Estuary, which includes San Francisco Bay, San Pablo Bay, Suisun Bay, and Sacramento-San Joaquin Delta. San Pablo Bay lies between the less salty Suisun Bay and the saltier San Francisco Bay. Twice daily, the saline waters from San Francisco Bay flow into San Pablo Bay. The freshwater flows are continuous, but vary on a seasonal basis due to their dependence on rainfall.

While the major source of freshwater to San Pablo Bay is inflow from Sacramento-San Joaquin Delta (over 90 percent on an annual basis), the San Pablo Bay watershed also has numerous rivers, creeks and small streams that all flow toward the Bay and contribute to the inflow of freshwater. The State of California recognizes 71 rivers and creeks in the watershed with a combined length of 1,770 kilometers (1,100 miles). Surface runoff creates the majority of freshwater flows within the rivers and streams. Consequently, stream flow in all the creeks varies enormously from season to season and from year to year depending on precipitation.

The San Pablo Bay watershed contains extensive areas of various wetland types, as well as a few natural lakes and ponds. On broad, flat alluvial plains where the valleys reach the Bay, an extensive network of tidally influenced wetlands is created. During periods of high rainfall amounts, stream flows or tides, wetlands provide storage capacity, slow water velocities, reduce peak flows and increase the duration of flow. Many wetlands are topographic depressions that retain storm water runoff and provide supplemental capacity when rivers or estuaries overflow their banks. Some wetland soils are able to slowly release water to the surface during periods of low water.

Groundwater is another important source of freshwater in the San Pablo Bay watershed, and is used primarily by agriculture and rural residents. Groundwater does not move in defined streams underground, but rather, moves slowly through spaces in water-bearing formations called aquifers. Rain and irrigation water recharge groundwater reserves. The principal groundwater aquifers in the watershed underlie the alluvial plains of the valleys.

Regional Hydrology

San Pablo Bay Basin is divided into several hydrologic units. Each of these hydrologic units is divided into smaller units called hydrologic areas and hydrologic sub-areas (HSA). The project area is located in the 206.6 HSA which occupies nearly 25,075 hectares (61,959 acres) in the northwestern part of Contra Cost County. Caltrans occupies an estimated area of 0.5 percent of the watershed and contributes about 1.1 percent to the total runoff. The storm water runoff from the project area drains into several natural drainages including Refugio Creek and Rodeo Creek. These creeks flow into San Pablo Bay that lies between the Suisun Bay to the east and the San Francisco Bay to the south. San Pablo Bay is located in the 206.10 HSA downstream from the 206.6 HSA.

3.6.2 Impacts

Based on the highway storm water runoff data collected by the Caltrans Storm Water Research and Monitoring Program, pollutants that are expected to be found in runoff from the project include conventional constituents*, hydrocarbons, metals, microbial agents, nutrients, volatile and semi-volatile organics, pesticides, herbicides and others. Pollutants are usually deposited on the roadway as a result of fuel combustion processes, lubrication system losses, tire and brake wear, transportation load losses, paint from infrastructure, and atmospheric fallout. There is a direct and positive relationship between vehicular activities and the concentration of these pollutants in the storm water runoff.

Caltrans maintains 28.6 kilometers (17.8 miles) of highway, a maintenance station, and three park and ride lots in the 206.6 HSA and contributes an estimated 1.1 percent (from all of its

* Conventional constituents include biological oxygen demand (BOD), Calcium, chlorine residual, chemical oxygen demand (COD), total dissolved solids (TDS), total organic carbon (TOC), total suspended solids (TSS), and total volatile suspended solids (TVSS).

facilities) to the total storm water runoff loads in the HSA. The increased volume of storm water runoff from the added project's impervious surface area to the entire HSA is very small and the project is not expected to increase the projected traffic volume; therefore, the pollutant loads from the project's traveled way will be negligible and will not have a significant impact on the overall water quality of the receiving water bodies. The project as planned would furthermore not create a substantial increase in downstream erosion or siltation, nor would the project result in the creation of a significant source of additional polluted runoff.

There is an inherent water quality benefit in the increased number of lanes as proposed by this project when compared to the existing conditions. Roadway runoff water quality is expected to improve since the presence of an added lane will decrease the response time of emergency teams to accidents and spills, thereby reducing the potential for spilled material being discharged into the receiving body of water. Emergency vehicles will be able to utilize the added lanes in response to accidents and spills whereas the existing conditions may require that traffic be cleared in order to allow access for emergency vehicles. This reduces pollutants produced by vehicles as a result of stop-and-go traffic.

Given all of the considerations described above, the project will not cause substantive changes or degradation of water quality from existing conditions.

The practices outlined in the SWMP and Statewide Storm Water Practice Guidelines ensure that certain minimum design elements be incorporated into projects to maintain or improve water quality. These include:

- Prevent Downstream Erosion – design of drainage facilities to avoid causing or contributing to downstream erosion. Drainage outfalls, when appropriate, will discharge to suitable control measures.
- Stabilize Disturbed Soil Areas – design would incorporate stabilization of disturbed areas (when appropriate) with seeding, vegetative or other types of cover.
- Maximize Existing Vegetative Surfaces – design would limit footprints of cuts and fills to minimize removal of existing vegetation.

3.7 Land Use, Planning, and Growth

Caltrans staff completed a community impact assessment for the project in August 2002. The study is bound separately from this EA/IS.

3.7.1 Affected Environment

Land Use

The proposed project is located in Contra Costa County in the San Francisco Bay Area. The nine counties generally considered for planning purposes as making up the Bay Area are: Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma. This area includes approximately 7,000 square miles, fifteen percent of which is developed. Undeveloped areas include San Francisco Bay, agricultural lands, open spaces, and parks.

According to the 2001 RTP Draft Environmental Impact Report prepared by the Metropolitan Transportation Commission, 70 percent of the developed land in the Bay Area was residential uses. The rest comprised employment-related uses. Developed land in the Bay Area is projected to increase by 115,000 acres between 2000 and 2020 – a 17 percent increase.

Contra Costa County

Contra Costa County is approximately 190,210 hectares (470,000 acres) and is located about 64 kilometers (40 miles) east of San Francisco. The County stretches from San Francisco Bay to the Sacramento-San Joaquin River Delta.

Approximately 25 percent of the total acreage of Contra Costa County is developed. More than half of all developed land is used for residences (including single family homes, apartments/duplexes, and mobile homes). The “Local” use category refers to establishments primarily serving the needs of area residents, such as banks, local government, schools, and restaurants. The “Basic” category refers to employment-generating uses that export a good or service out of the community (i.e., manufacturing, long distance transportation and communications, and statewide, national or international finance, insurance, and real estate).

According to the 1996 Contra Costa County General Plan, new development has shifted away from the western part of the County and toward the foothills around Mt. Diablo.

The proposed project is located in West Contra Costa County, which contains about 20 percent of the County’s urbanized area. The western part is separated from the rest of the County by the Briones Hills and includes the urbanized shoreline of San Francisco and San Pablo Bays. The urbanized portions of West Contra Costa County generally coincide with the alignment of I-80, which passes through or near the cities of Richmond, San Pablo, Pinole, and El Sobrante, before entering the communities in the project area: the City of Hercules and the unincorporated communities of Rodeo and Crockett.

The largest residential area in West Contra Costa County is located in Hercules. Once the home of California Powder Works, the nation’s largest producer of TNT, Hercules now has a large residential population. Large areas of medium density single family residential land use (3 to 4.9 units/acre) are interspersed with open space zoning on the east side of I-80.

Commercial uses radiate outward from the I-80/SR 4 interchange, the City's primary connection to the interstate.

Land use in Rodeo is a mixture of residential, commercial, office, and public uses. Residential zoning west of I-80 is generally medium density multiple family use (12 to 20.9 units per acre), with some high density multiple family use (21 to 29.9 units/acre) and high density single family use (5 to 7.3 units/acre). East of I-80, residential use in Rodeo is grouped into two large residential subdivisions. Densities in these subdivisions are high, with open space and business park areas on the community's easternmost edge.

Between Rodeo and Crockett is the "Oleum" area, dominated by the Phillips 66 (formerly Tosco) oil refinery. This area is zoned for heavy industrial uses on both sides of the freeway.

Development in Crockett is oriented around the Carquinez Strait. An area of heavy industrial use (occupied by the C&H Sugar plant) takes up a large portion of the strait east of and adjacent to the I-80 Carquinez Bridge. Otherwise, land uses in this community are a mixture of residential and commercial. The southern periphery of the community is dedicated to open space. Parklands and public/semi-public uses are interspersed within the community.

Local Planning Goals and Policies

Contra Costa County

Contra Costa County supports construction of the proposed project. The 1996 Contra Costa County General Plan lists the construction of new lanes, HOV lanes, and a new bridge (the Carquinez Strait Bridge) on I-80 as the first of more than a dozen proposed roadway projects proposed for the County.

Goals for roadway and transit improvements in Contra Costa County include:

- 5-A: To provide a safe, efficient and balanced transportation system.
- 5-C: To balance transportation and circulation needs with the desired character of the community.
- 5-D: To maintain and improve air quality standards.
- 5-I: To encourage use of transit.
- 5-J: To reduce single-occupant auto-commuting.

County roadway policies applicable to the proposed project include the following:

- 5-22: Use of alternative forms of transportation, especially transit, shall be encouraged in order to provide necessary services to transit-dependent persons and to help minimize automobile congestion and air pollution.
- 5-ab: Encourage Caltrans to construct a system of commuter lanes (high occupancy or HOV lanes) on new or expanded freeways within the Transit Corridors identified

- on the Transit Network Plan, and work with the cities and Caltrans in establishing additional commuter lanes on new or expanded expressways and regional arterials.
- 5-ad: Encourage Caltrans to construct the I-80 HOV facility for reversible operation, westbound for AM commute and eastbound for PM commute, and provide more opportunities for HOV access and egress along the facility.

Highway congestion is recognized throughout the General Plan as a recurring issue in the County, and in the Bay Area as a whole. Building HOV lanes and encouraging increased transit usage is an important aspect of the County's strategy to reduce congestion.

City of Hercules

The City of Hercules recognizes the congested conditions on I-80 in the Environmental Impact Report for its 1995 General Plan Land Use and Circulation Elements Update and Redevelopment Plan Amendments. Because congestion on I-80 may result in the diversion of some traffic to San Pablo Avenue, the General Plan Update supports measures to reduce trips on I-80. The description of I-80 in the General Plan Update includes the proposal to add HOV lanes to I-80 in the project area.

Transportation objectives in the Circulation Element of the 1994 Draft General Plan include:

- 1) Provide for the movement of people and commodities in the City
- 2) Plan for the preservation and enhancement of visual qualities as viewed from designated scenic routes. Subgoals of these objectives are to:
 - d. Provide adequate access from the freeways to the surface street system.
 - e. Coordinate the City's street system with adjoining city, county, and state facilities.
 - h. Promote public transit service within the City and area.

The Circulation Element's "Implementation" section recommends the following:

14. Continue programs that include [selected items]:
 - Trip reduction goals for private and public development
 - Actions to reduce peak hour private vehicle trips (e.g., flex-time, car pools, support of transit)

Metropolitan Transportation Commission (MTC)

The MTC is the regional transportation planning agency in the nine-county Bay Area. The MTC prepares the regional transportation plans and transportation improvement programs for this area.

The westbound lane of the proposed project is included in the MTC's 2002 Regional Transportation Improvement Program. The eastbound lane is included in the 2001 Regional Transportation Plan's "Blueprint," indicating that it is a supported project.

Jobs/Housing Balance

The 1989 Contra Costa General Plan states that the jobs/housing ratio for West County was 0.66 in 1985, and was anticipated to increase to 0.77 after construction of the projects planned in the General Plan (by 2005). The General Plan anticipated that the growth of nonresidential development would outpace that of residential development in West County through to 2005.

According to the 2001 RTP Draft Environmental Impact Report prepared by the MTC, by 2025 there will be more jobs in the San Francisco Bay Area than employed residents. According to this report, in 2000 Contra Costa County had 116,000 more workers than jobs, and Solano County had 56,000 more workers than jobs. By the 2025, Contra Costa County is projected to have a "surplus" of 143,000 workers. Solano County is expected to have a surplus 77,000 workers. Within the Bay Area, the counties with a net inflow of workers are (and are expected to continue to be): San Francisco, Santa Clara, and Alameda.

Planned Development

Contra Costa County

No known large-scale housing or employment-generating development is currently in the development process within the unincorporated portions of the project area.

The Contra Costa County 1996 General Plan identifies the Crockett Pointe General Plan Amendment as a 100-unit residential development awaiting further planning and the Crockett Senior Housing Project as a planned 37-unit low or very-low income residential development. In the Rodeo community, the Plan directs new residential development toward infill and redevelopment, and recommends the reuse of existing buildings.

City of Hercules

The General Plan Update prepared by the City of Hercules in 1995 was organized around four proposals for new development:

1. Extension of the linear park along Refugio Creek to San Pablo Bay.
2. Developing retail uses near the I-80/SR 4 interchange.
3. Developing new jobs and business opportunities to be accommodated between existing employment areas and the I-80/SR 4 interchange area.
4. Developing new residential properties on vacant land near existing neighborhoods rather than near employment or commercial areas.

The General Plan Update also included the following transportation projects, expected to be completed by 2010:

- Willow Avenue widening and addition of turn lanes and traffic signal at I-80
- Construction of SR 4 freeway between I-80 and Cummings Skyway
- Construction of a new street between the SR 4/Claeys Street interchange and Refugio Valley
- Rehabilitation of San Pablo Avenue, with the addition of bicycle lanes
- Refugio Valley Road widening, with the addition of bicycle lanes
- Construction of a transit center/park-and-ride lot at San Pablo and Sycamore Avenues
- Ramp improvements at SR 4/Bayberry Avenue
- Re-alignment and signalization of the Sycamore Avenue/Palm Avenue intersection

The City of Hercules also adopted a Redevelopment Plan in 1998. This plan includes the following four major proposals:

1. New Pacific Properties: A 206 acre site located along the northern city boundary west of I-80 comprising up to 879 residential units, 65,000 square feet of residential/retail “flex” space, a school, parks and open space.
2. Creekside Shopping Center: A proposed expansion of the existing shopping center located on Sycamore Avenue east of I-80. Up to 77,800 square feet of new retail space may be developed on this site.
3. Park Lake Plaza: Located south of Sycamore Avenue, adjacent to Creekside Shopping Center, the Plan focuses on the reuse of existing vacant retail space.
4. North Claeys Ranch: Located in the City’s Sphere of Influence north of SR 4, the Plan includes the development of up to 1.3 million square feet of industrial land and park and recreational facilities.

Growth Inducement

Growth inducement is defined as the relationship between the proposed transportation project and growth within the project area. A traditional shorthand way of looking at growth inducement is as the removal of obstacles to growth, as specified in the CEQA Guidelines. According to Caltrans Environmental Handbook, Volume Four:

“Capacity improvements should be considered removal of transportation related obstacles to growth. By this given definition, a project to increase capacity on a highway can be understood as growth inducing.... The conclusion sought from the analysis is whether or not the future project capacity will exceed the predicted traffic capacity as needed by the planned population of the area. The identified excess capacity is an indicator of the likely significance of the growth induced or facilitated by the project.” (page 39)

Because the proposed project would not include excess capacity, it should not be considered growth inducing. Current and projected development patterns are organized around the supply of jobs in San Francisco, Santa Clara, and Alameda Counties and the abundance of affordable housing in outlying counties. This pattern of development is likely to continue with or without the proposed project. The project would not include sufficient capacity to significantly improve commuting times through the project area.

2001 Regional Transportation Plan (RTP)

The environmental impact report (EIR) prepared for the MTC's 2001 RTP states that average travel time per trip in the Bay Area is likely to increase with or without the transportation improvements included in the RTP. The RTP EIR anticipates that in the Bay Area, the average delay per vehicle trip in the year 2025 will be 3.4 minutes without the projects proposed in the RTP and 3.0 minutes with these projects – compared to 1.6 minutes per trip in 1998. The MTC is not anticipating that planned transportation improvements will keep pace with increases in vehicle trips in the region, or that it will provide excess capacity within the transportation system.

Traffic Analysis

The “Traffic Operations Analysis Summary” prepared for the proposed project states that in 2025, congestion will occur in the project area during the westbound morning and eastbound evening commutes with or without the proposed project.

Under the No Build Alternative, average delay for westbound single occupant vehicles (SOVs) in the morning is expected to be 11.7 minutes and 7.7 minutes for HOVs. In the evening, eastbound SOVs are expected to encounter 16.1 minutes of average delay and HOVs 4.1 minutes.

With the proposed project, during the westbound morning commute vehicles in the mixed-flow lanes are expected to encounter 12.5 minutes of delay time, and vehicles in the HOV lane are expected to encounter 6.1 minutes of delay time. By using the HOV lane, westbound morning commuters would save 6.4 minutes over SOVs.

During the eastbound evening commute, vehicles in the mixed-flow lanes are expected to encounter 18 minutes of delay, and vehicles in the HOV lane are expected to encounter 2.6 minutes of delay, 15.4 minutes of travel time savings.

These data suggest that the proposed project would not result in excess capacity in either the SOV or HOV lanes. In 2025, in the westbound direction, peak hour traffic volumes are expected to exceed roadway capacity and result in delays, whether or not the proposed project is constructed. However, the delays will be less with the project.

Conclusion

The proposed project supports the existing distribution of jobs and housing in this area by providing a reduction in the anticipated level of delay on I-80 in the project area. Regional planning data and traffic data specific to the proposed project indicate that:

- With or without the proposed project, by the year 2025, traffic conditions in the westbound direction are expected to worsen in the area (as measured by increases in travel times). However, increases in travel time will be less with the proposed project.
- Neither the proposed project nor the RTP results in a transportation system with excess capacity, as measured by the system's ability to provide movement without delay.
- Given the time savings provided by existing HOV lanes in the area, the proposed project is not expected to result in more than a three minute time savings during peak hours.

3.7.2 Impacts

Land Acquisition

The proposed project would include the acquisition of two residential properties located near the California Street overcrossing of I-80. This is not expected to significantly alter land use patterns in the project area.

Consistency with Local Plans and Policies

The proposed project is consistent with the plans and policies of Contra Costa County and the City of Hercules. The project is included in the MTC's plans for the Bay Area.

The proposed project would be inconsistent with Contra Costa County's General Plan roadway principle 5-ad, which encourages the use of reversible HOV lanes. The proposed project does not include reversible HOV lanes. This is not considered a significant inconsistency, since this will continue to be an option in the future after construction of the proposed project.

Disruption of Orderly Planned Development

The proposed project would not disrupt orderly planned development. The project would not require permanent encroachment on any privately owned land other than the properties described in Section 3.2.

3.8 Noise

Caltrans staff completed a traffic noise study for the project in May 2002. The study is bound separately from this EA/IS.

NEPA and CEQA and their implementing guidelines and regulations mandate the evaluation and documentation of environmental benefits and consequences of project activities and implementation of mitigation measures where practicable and feasible to minimize or avoid environmental impacts. The requirements for environmental documents under NEPA and CEQA also include subjects in other areas of environmental legislation and implementing laws and regulations. Included among these are laws and regulations dealing with traffic noise.

Federal Requirements

Under NEPA, impacts and measures to mitigate adverse impacts must be identified, including the identification of impacts for which no or only partial mitigation is possible. FHWA regulations constitute the Federal Noise Standard. Projects complying with this Standard are also in compliance with the requirements stemming from NEPA. Under FHWA regulations (23 CFR 772), noise mitigation or abatement must be considered for Type I projects when the project results in a *substantial noise increase* or when the predicted noise levels *approach or exceed* the Noise Abatement Criteria (NAC).

Noise abatement measures which are *reasonable* and *feasible* and that are likely to be incorporated in the project, as well as noise impacts for which no apparent solution is available, must be identified and incorporated into the project's plans and specifications.

California Requirements

Under CEQA, a *substantial noise increase* may result in a significant adverse environmental effect and, if so, must be mitigated or identified as a noise impact for which it is likely that no, or only partial abatement measures are available. Specific economic, social, environmental, legal, and technological conditions may make additional noise attenuation measures infeasible.

Streets and Highways Code – Section 216

If, as a result of a proposed *freeway* project, noise levels in classrooms of public or private elementary or secondary schools exceed 52 dBA, Leq(h), noise abatement shall be provided to reduce classroom noise to the criteria or below. (A dBA is a unit of sound pressure level in decibels on the “A-weighted” Scale. Leq(h) is defined as the equivalent steady-state sound level that, in a specific hour, contains the same acoustic energy as a time-varying sound level during the same hour.) If the classroom noise exceeds the criteria before and after the freeway project, noise abatement shall be provided to reduce classroom noise to pre-project noise levels. Please refer to the Streets and Highways Code, Section 216.

Caltrans/FHWA Noise Policy

Traffic noise impacts occur, when future predicted noise levels increase by 12 decibels or approach or exceed the noise abatement criteria (NAC) of 67 dBA, Leq(h) for activity category 'B' as defined in Table 1102.2 of the Caltrans Highway Design Manual (See Exhibit A-1). The term 'approach' is defined by Caltrans as one dBA below the criterion. For example, a site with future noise levels of 66 dBA, Leq(h) would qualify for consideration of noise abatement.

Screening Procedure

Although the proposed project will have a negligible impact on future noise levels, existing noise levels approach or exceed the noise abatement criteria at all locations investigated and therefore meet the criterion of traffic noise impact. The project fails the screening procedure test and a detailed analysis has therefore been prepared.

Impact Analysis

The traffic noise impact analysis for this project considered among other things, land use activities, highest hourly noise levels, future noise levels using traffic characteristics that yield the worst hourly traffic noise impact, and abatement measures, where reasonable and feasible.

Preliminary Reasonableness Assessment

When a site qualifies for consideration of noise abatement, soundwall proposals for the area are evaluated according to two general criteria: feasibility and reasonableness. Feasibility is an engineering consideration. A minimum 5-dBA noise level reduction must be achieved by the proposed soundwall for it to be considered feasible. Feasibility may also be affected by safety considerations, access requirements, or overall constructability.

The preliminary reasonableness involves the consideration of the cost of abatement, absolute noise levels, the date of development of the impacted residences, and the life cycle of the abatement. These factors are addressed by calculating the *reasonable allowance* per benefited residence as outlined in the Caltrans publication entitled "Traffic Noise Analysis Protocol" (TNAP), dated October 1998.

Final Reasonableness Assessment

All feasible soundwalls are further evaluated in the final reasonableness assessment. The final reasonableness determination is subjective in that common sense and good judgment are exercised to arrive at an abatement decision. The decision is based on, but not limited to, both factors involved in the preliminary reasonableness decision and the following considerations:

- Environmental impacts of abatement construction
- Opinions of impacted residents.

- Input from the public and local agencies.
- Social, economic, environmental, legal, and technological factors.

The views (opinions) of residents directly affected by the noise barrier under consideration shall be a major factor in noise abatement determination. More than 50 percent of affected residents must support the proposed noise barrier construction. Should controversy arise, Caltrans may elect to request the local governing body to mediate and if necessary, submit an approved resolution to the state, whether or not to proceed with construction of the soundwall(s).

3.8.1 Affected Environment

Much of the existing freeway is located in deep cut sections, fill sections and traversing open space, residential areas and oil refineries. Residential subdivisions, a private park, a public trail, and a school are located on both sides of the freeway from the I-80/SR 4 interchange to north of California Street in the City of Rodeo. Most receptors are located between Willow Avenue and California Street.

Existing Noise Levels

One 24-hour and twenty 15-minute measurements were recorded in 2001 and 2002. The long-term measurement revealed that daytime noise levels near the freeway did not vary more than 2 dBA between the hours of 5 A.M. and 5 P.M. The loudest hours occurred at 9 A.M. and 1 P.M. and the lowest noise level occurred between midnight and 2 A.M. Figures 1-2b to 1-2d show the location of noise receptors. Table 3.7-1 summarizes the measured existing noise levels at the receptor locations. Field noise readings were used for model calibration and as a basis for determining traffic noise impacts. Short-term measurements, where appropriate, were adjusted upward to reflect the noisiest hour of the day. Measurements were taken at exterior areas such as yards or frontages of residences facing the freeway. Noise levels, where appropriate, have been adjusted upwards to reflect the noisiest hour of the day.

Table 3.7-1 – Measured Existing Noise Levels

Between the I-80/SR 4 interchange and Willow Avenue:

<i>Receptor ID</i>	<i>Noise Level dBA, Leq(h)</i>	<i>Street Address</i>	<i>Traffic Direction Nearest to Receptor</i>
R54	59	343 Newbury	EB
R55	46	1293 Canterbury	EB
R56	56	337 Brighton	EB
R57	53	1000 Chelsea	EB

Between Willow Avenue and California Street:

<i>Receptor ID</i>	<i>Noise Level dBA, Leq(h)</i>	<i>Street Address</i>	<i>Traffic Direction Nearest to Receptor</i>
R5	68	859 Vaqueros Ave	WB
R20	76	879 Hawthorne Drive	WB
R24	66	919 Hawthorne Drive	WB
R26	58	931 Hawthorne Drive	WB
R27	56	955 Hawthorne Drive	WB
R28	56	1001 Hawthorne Drive	WB
R36	80	848 California Street	WB
R51	52	1399 –7 th Street at California	WB
R53	57	217 Marlin Street	EB
R52	59	943 Seascap Circle	EB
R47	59	969 Seascap Circle	EB
R49	54	1019 Seascap Circle	EB
R48	59	1055 Seascap Court	EB
R39	72	912 California Street	EB

East (north) of California Street:

<i>Receptor ID</i>	<i>Noise Level dBA, Leq(h)</i>	<i>Street Address</i>	<i>Traffic Direction Nearest to Receptor</i>
R50	48	Hillcrest School	WB
R42	74	905 Springwood Court	EB

Noise From Demolition of The California Street Overcrossing

Noise levels from construction activities will be higher at times than current existing noise levels. Demolition of the California Street overcrossing would likely take up to one week. In order to minimize the disruption of traffic on I-80, this construction would occur at night.

Table 3.7-2 summarizes noise levels produced by construction/demolition equipment commonly used on roadway construction projects. As indicated, equipment involved in construction and demolition is expected to generate noise levels ranging from 80 - 95 at a distance of 15 meters (50 feet). Noise produced by construction equipment would be reduced over distance at a rate of about 6 dBA per doubling of distance.

Table 3.7-2 – Construction Equipment Noise

<u>Type of Equipment</u>	<u>Maximum Noise Level (dBA) at 15 meters [50 feet]</u>
Pile driver	95
Hoe ram (mounted impact hammer)	95
Scraper	85
Heavy truck	85
Bulldozer	85
Pneumatic tools	85
Concrete pump	82
Backhoe	80

Source: Noise Control Engineering Journal, September-October 2000, p. 160

3.8.2 Operational Impacts

Future predicted noise levels with and without noise abatement were calculated utilizing FHWA's Traffic Noise Model (TNM). Input parameters consisted of hourly traffic volumes consisting of automobiles, medium and heavy-duty trucks, buses and motorcycles. Level of Service (LOS) D as defined in the Highway Capacity Manual, dated 1997 were used in all modeling scenarios to represent the noisiest hour of the day in the future. Modeling considered traffic speeds, roadway grade, terrain configuration, type of groundcover, and natural and man-made shielding.

Considering existing and future traffic volumes, speeds and mix of traffic only, noise levels are expected to increase 1 to 2 dBA. These predicted increases are considered to be barely perceptible to the average, healthy human ear. However, at many locations, existing noise levels already exceed the noise abatement criteria of 67 dBA for residential areas; noise abatement has therefore been considered.

3.8.3 Construction Phase Impacts

Demolition of the overcrossing structure would generate high noise levels in nearby neighborhoods. This could have a significant temporary impact on residents of these neighborhoods. However, Caltrans will coordinate with local residents affected by the demolition and reconstruction of the California Street overcrossing in order to reduce the impacts to a less-than-significant level.

3.8.4 Mitigation/Avoidance Measures

Noise Abatement Considered

Noise abatement is considered if future predicted noise levels approach or exceed the noise abatement criteria (NAC) of 67 dBA, Leq(h) for Activity Category B. Category B includes picnic areas, recreation areas, playgrounds, active sport areas, residences, motels, hotels, schools, churches, libraries, and hospitals. Where feasible, a barrier should break the line of sight between a receptor 1.5 meters (5 feet) above ground and a truck stack, assumed to be 3.5 meters (11.5 feet) above the pavement. Minimum height of noise barriers is 1.8 meters (6 feet); maximum height at the edge of shoulder is 4.3 meters (14 feet) and 5.0 meters (16 feet) at the State's right-of-way line. Noise abatement in the form of soundwalls has been investigated for private residences and a public park along I-80 from east (north) of Willow Avenue to just east (north) of California Street. Future noise levels will approach or exceed 67 dBA and soundwalls will provide a minimum 5 dBA reduction in noise levels. No impacted receptors were identified south (west) of Willow Avenue or east (north) of California Street.

Proposed Soundwalls

Five soundwalls are proposed for the project. Figures 1-2c and 1-2d show the locations of proposed soundwalls.

Location #1 – Soundwall (WB-1) - Westbound Willow Avenue off-ramp

Fourteen residences are located adjacent to the westbound off-ramp. Existing noise levels vary from 67 to 71 dBA. Future predicted noise levels will increase 1 dBA with the addition of HOV lanes. A continuous soundwall 4.3 meters (14 feet) high and 303 meters (994 feet) long would reduce noise levels 5 to 7 dBA for twelve receptors. The wall would be located on top of a proposed retaining wall at the edge of shoulder of the ramp. The wall would also break the line-of-sight between a truck stack and receptors. A lower soundwall would protect nine receptors. A majority of residences were constructed before January 1978.

Location #2 - Soundwall (WB-2) - West of westbound Willow Avenue off-ramp

Eleven residences are located adjacent to westbound Route I-80. Existing noise levels range from 63 to 77 dBA. Future predicted noise levels will increase 1 dBA with the addition of HOV lanes. A 4.3 meter (14 foot) high and 175 meter (574 foot) long soundwall at the State's right-of-way line would reduce noise levels from 5 to 8 dBA for nine receptors. The soundwall would break the line-of-sight between a truck stack and three receptors. A lower soundwall would protect seven receptors and would not break the line-of-sight for any receptors. A majority of residences were constructed before January 1978.

Location #3 – Soundwall (WB-3) - West of California Street

Nine residences are located adjacent to the westbound traffic lanes of Route I-80 just west of California Street. Future predicted noise levels will increase 1 to 2 dBA with the addition of HOV lanes. A 4.3 meter (14 foot) high and 185 meter (607 foot) long soundwall located at the State's right-of-way line would reduce noise levels 5 dBA for five receptors and 14 dBA for one receptor. This lone receptor will be closest to the soundwall and therefore gain the greatest benefit. The soundwall would break the line-of-sight between a truck stack and nine receptors. A lower soundwall would reduce noise levels for four receptors. A majority of residences were constructed before January 1978.

Location #4 – Soundwall (EB-4) - West of California Street

A playground area and two residences (R38, 39 and 43) are located adjacent to the eastbound traffic lanes of Route I-80 just south of California Street. The playground structures were

removed in July 2002. According to the property manager of the View Park Community, there are no plans to replace the playground structures. Future predicted noise levels will increase 1 dBA with the addition of HOV lanes. A 5.0 (16 foot) meter high and 100 meter (328 foot) long soundwall located at the State's right-of-way line would reduce noise levels 8 dBA and break the line-of-sight between a truck stack and two receptors. A lower soundwall would impact receptor R44 located just east of California Street. Residences located further west will experience noise levels below 66 dBA and are therefore not eligible for noise abatement. A majority of residences were constructed before January 1978.

Location #5 – Soundwall (EB-5) - East of California Street

Six residences (R40-42 and 44-46) are located adjacent to the eastbound traffic lanes of Route I-80 just east of California Street. Future predicted noise levels would increase 1 dBA with the addition of HOV lanes. A 5.0 meter (16 foot) high and 147 meter (482 foot) long soundwall located at the State's right-of-way line would reduce noise levels from 6 to 9 dBA for six receptors. The soundwall would break the line-of-sight between a truck stack and four receptors. A lower soundwall would reduce noise levels from 5 to 8 dBA for five receptors and would not break the line-of-sight for any receptor. A majority of residences were constructed before January 1978.

A final determination to construct soundwalls will be made after the public input process has been completed and the soundwalls have been found to be cost-effective during the detail design stage.

Noise Abatement Not Considered

Noise abatement was not considered at the following locations because exterior noise levels from the freeway are below 62 dBA, Leq(h) and no further analysis is therefore required according to Section 2.2 [d] of the Traffic Noise Analysis Protocol.

- On the east side of I-80 between SR 4 and Willow Avenue: Newbury, Canterbury, Brighton, Chelsea.
- On the east side of I-80 between Willow Avenue and California Street: Seascape Circle, Marlin Court.
- On the west side of I-80 between Willow Avenue and California Street: Portion of Hawthorne Drive.
- On the west side of I-80 east (north) of California Street: Hillcrest School.
- Areas within the project limits that have no development (existing or future) of any kind, such as open empty fields.

Construction Activities

Incorporating the following measures in the plans and specifications can minimize these temporary impacts:

- Advance notification to surrounding residents and businesses.
- The consideration of constructing noise barriers as first items of work, where feasible.
- Use of stock piled dirt as earthen berms to attenuate the impact of construction activities.
- Use of temporary noise barriers/curtains.
- Establishment of a field office to handle noise complaints and keep the community informed of upcoming especially noisy construction activities.
- Conduct on-site noise monitoring during demolition to document actual noise levels.
- The enforcement of Section 7-1.01 I, "Sound Control Requirements" of the Standard Specifications.

Demolition of the California Street Overcrossing

Caltrans will coordinate with local residents affected by the demolition and reconstruction of the California Street overcrossing in order to reduce the impacts to a less-than-significant level.

3.9 Paleontological Resources

California State University, Fresno (CSU Fresno) completed a paleontological resource assessment of the Interstate 80 HOV gap closure project in Contra Costa County in March 2002 (bound separately). The objectives of the assessment were to identify specific fossil localities and sensitive geologic formations within the proposed project area and to make recommendations for reducing project related impacts to fossil resource and to assist Caltrans with compliance responsibilities under NEPA and CEQA.

3.9.1 Affected Environment

Geologic units and fossil occurrences within one mile of the ends of the proposed project area and within one mile on each side of the roadway were assessed. CSU Fresno conducted a record search for fossil sites within the project area at the University of California Museum of Paleontology at Berkeley (UCMP) and the Los Angeles County Museum of Natural History (LACM). The LACM has no fossil localities within the project area but has one locality in the region from the Pinole Tuff which crops out within the project area. The UCMP has

nineteen vertebrate fossil sites within the project area and sixteen localities in the immediate vicinity.

After reviewing the geologic maps, consulting the UCMP and LACM locality records, and conducting a field examination of the project area, CSU Fresno plotted the fossil localities on USGS 7.5" topographic maps (Benicia, Mare Island) and assigned a high sensitivity rating to the entire project area. The high sensitivity designation indicates that the strata within the project area have a good chance of producing significant vertebrate remains.

3.9.2 Impacts

The stratigraphic units in the project area have produced scientifically significant vertebrate fossil remains either in the project area or within the region. Because there is a possibility of encountering additional vertebrate specimens during excavation or road cut phases of construction, paleontological monitoring is recommended (refer to mitigation below).

3.9.3 Mitigation/Avoidance Measures

Caltrans recommends monitoring where excavation or road cuts will disturb in situ (natural or original position or place) sedimentary strata below the upper soil layers. The uppermost few feet of sediment in the project area are unlikely to yield significant vertebrate remains. However, deeper excavation may encounter vertebrate fossils because of the concentration of previous vertebrate sites in the area. Areas occupied by sediment previously disturbed by human activity will not require monitoring.

The goal of monitoring is to reduce the adverse impact on paleontological resources within the project area by collecting scientifically significant vertebrate fossils. The contractor undertaking monitoring will develop a paleontological resource impact mitigation plan that addresses in detail the procedures for collecting vertebrate fossils, including recording pertinent geographic and stratigraphic information, stabilization (preservation) methods for the specimens, and make provisions for the remains to be accessioned into the collections of an appropriate repository (such as the Los Angeles County Museum of Natural History or University of California Museum of Paleontology) and catalogued for future scientific study. The mitigation plan should address both macrofossil and microfossil recovery. Following completion of monitoring, collection, and specimen processing, the contractor should generate a final report detailing the results of the mitigation program.

3.10 Traffic/Transportation

Caltrans staff completed a Traffic Operations Analysis for the project in April 2002. The study is bound separately from this EA/IS.

3.10.1 Affected Environment

As part of the demolition and re-construction of the California Street overcrossing, I-80 will be temporarily closed in each direction for certain lengths of time. Closures will occur during the period of lowest mainline traffic volumes (approximately 900 vehicles per hour, each direction). The table below details the closures:

Table 3.10-1 – I-80 Temporary Closure Information

Westbound I-80, between the Crockett off-ramp and the Willow Avenue on-ramp

Potential Closure Hours:

Monday – Thursday	Full closure 12-4 AM, two-lane closure 11 PM-12 AM
Friday	Full closure 12-4 AM
Saturday	Full closure 1-5 AM, two-lane closure 12-1 AM
Sunday	Full closure 1-5 AM, two-lane closure 12-1 AM and 5-7 AM

Duration: As needed for approximately 1 month

Eastbound I-80, between the Willow Avenue off-ramp and the Crockett on-ramp

Potential Closure Hours:

Monday – Thursday	Full closure 1-5 AM, two-lane closure 11-12 PM and 12-1 AM
Friday	Full closure 1-5 AM, two-lane closure 12-1 AM
Saturday	Full closure 1-6 AM, two-lane closure 6-7 AM
Sunday	Full closure 2-7 AM, two-lane closure 12-1 AM and 7-8 AM

Duration: As needed for approximately 1 month

Traffic will be diverted off the mainline of I-80 onto surface streets. The detour route is 6.9 kilometers (4.3 miles) long, compared to the 4.5 kilometer (2.8 mile) segment of I-80 being bypassed. The detour route for the westbound closure is to exit at the Crockett westbound off ramp, proceed on San Pablo Avenue, continue on Parker Avenue/Willow Avenue, and then return to I-80 via the Willow Avenue westbound on-ramp. The eastbound detour route would be just the opposite of the westbound detour route: exit at the Willow Avenue eastbound off-ramp, continue north on Willow Avenue/Parker Avenue, remain after road turns to San Pablo Avenue, and then return to I-80 via the Crockett eastbound on-ramp.

Temporary detours are also required in the local community as a result of the closure of California Street. In the area northwest of I-80, Hawthorne Drive and Willow Avenue will provide the temporary detour. In the neighborhood southeast of I-80, California Street, Viewpoint Blvd. and Willow Avenue will serve as temporary detours. The duration of the temporary detours will be approximately 6 months beginning in the spring of 2004.

During the widening and closure of the Willow Avenue Interchange, Bayberry Avenue, San Pablo Avenue, and Willow Avenue will serve as temporary detours. The closure will be intermittent, with specific timing to be determined.

3.10.2 Impacts

Please refer to Sections 3.2 (Community Impacts) and 3.11 (Utilities/Emergency Services) regarding specific impacts.

Caltrans will be preparing a Traffic Management Plan to stage I-80 and ramp closures in order to minimize the degree to which they interrupt travel and business patterns. Impacts will be minimal.

3.11 Utilities/Emergency Services

3.11.1 Affected Environment

Utilities

Utility service provided in the project area include natural gas and electricity (Pacific Gas and Electric (PG&E)), telephone (SBC Pacific Bell), water (East Bay Municipal Utility District), sewer (West Contra Costa Sanitary District, Rodeo Sanitary District, Crockett-Valona Sanitary District, and the City of Hercules), and solid waste (Contra Costa County and the City of Hercules).

Law Enforcement

Contra Costa County Sheriff's Department

The unincorporated area of Contra Costa County is protected by the Sheriff's Department, which has a network of stations located throughout the County. The Sheriff's Office has a total staff of over 1,000 employees, with 750 sworn personnel.

According to the Contra Costa County 1996 General Plan, the Sheriff's Department's desired response time to high priority police calls is five minutes in central business district, urban, and suburban areas.

Hercules Police Department

The Hercules Police Department provides police protection to residents of the City of Hercules. The Department currently has a staff of 20 sworn officers and 5 part-time reserve officers.

According to the City's General Plan Update, response times for the Hercules Police Department were between 4 and 7 minutes for emergency calls and 15 minutes for non-emergency calls.

Fire Protection

Rodeo-Hercules Fire District

The Rodeo-Hercules Fire District has two stations in the project area, one located at 1680 Refugio Valley Road in Hercules and one located on Third Street in Rodeo. The District serves an area of approximately 25 square miles with a staff of approximately 33. The County General Plan strives for a total response time of five minutes for 90 percent of all emergency calls in central business districts and urban and suburban areas.

Crockett-Carquinez Fire District

The Crockett-Carquinez Fire District's station, located in Crockett, is under the jurisdiction of the county and provides emergency fire and medical response to the Crockett community.

3.11.2 Impacts

Closure of California Street Overcrossing

The temporary closure of California Street would have a temporary adverse impact on accessibility through the Rodeo community for emergency vehicles.

The demolition and reconstruction of the California Street overcrossing will require the temporary relocation of the PG&E gas and electrical lines that cross at California Street. A PG&E power pole and maintenance box at the northeast side of the California Street overcrossing may be relocated to accommodate the new structure. No electrical or gas service will be disrupted. Caltrans will continue to consult with PG&E regarding relocation of their utilities.

Temporary Ramp Closures

The greatest potential for temporary adverse impacts lies in the I-80/SR 4 and I-80/Willow Avenue temporary ramp closures. According to the Rodeo-Hercules Fire District, closure of the I-80/Willow Avenue ramps could have a major impact on the District's ability to both respond to emergencies and receive help from adjacent fire departments (Biagi 2002). The District also responds to emergency calls on I-80, and the proposed detours would be likely to have a negative impact on response times.

In the case of the proposed project, the negative impacts of temporary ramp closures would be balanced by the fact that no full interchange closures are proposed. Traffic eastbound on I-80, for example, would be able to exit and return to I-80 without diversion during closures of the westbound ramps.

Temporary closure of the Cummings Skyway ramps is not likely to have a significant impact on businesses, emergency services, or residents in this area. At the time of project construction, direct access between Crockett and I-80 will be available at the Crockett on and off-ramps (currently, during the construction work on the Carquinez Bridge, access between

Crockett and I-80 is provided via the connection from Cummings Skyway to San Pablo Avenue). This closure would affect traffic originating in Crockett bound for points along eastbound SR 4. Alternate access to Cummings Skyway east of Crockett is available via Crockett Boulevard.

3.11.3 Mitigation/Avoidance Measures

The contractor will notify emergency service providers of the proposed dates of the California Street overcrossing structure closure. Because this is a secondary access route for emergency vehicles, provision of advanced warning of the closure of this structure will reduce its impact on emergency services to a less-than-significant level.

All emergency services will be contacted prior to any ramp closures. If possible, closed ramps will be opened temporarily during emergency situations.

The Transportation Management Plan for the project will include provisions regarding emergency service providers.

3.12 Vegetation

Caltrans biologists completed a Natural Environment Study for the project in August 2002. The study is bound separately from this EA/IS.

Various consultations, sources, and methodologies were used to conduct vegetation studies. Research involved a review of published literature, maps, photography, and consultation with resource agencies and biologists who have expertise and experience with local (project area) biological resources of concern. Caltrans established a study area to define the geographic boundaries of natural resource studies.

A list of special-status plant species was developed from a review of the following sources: 1) the California Natural Diversity Data Base (CNDDB 2001) for the Benicia and Mare Island U.S.G.S. 7.5 minute quadrangle; and 2) California Native Plant Society's Electronic Inventory of Rare and Endangered Plants (CNPS 2001). Pursuant to Section 7 of the Endangered Species Act, a special-status species list was requested and received from the USFWS.

Caltrans biologists conducted field surveys to gather site-specific biological data. In order to comply with the provisions of various state and federal environmental statutes and executive orders, potential impacts to natural resources of the project area were investigated and documented. Species-specific studies were conducted to evaluate the presence, absence, and/or suitability of habitats for special-status plant taxa potentially occurring on the project

site. Field investigations conducted in support of the biological assessment include surveys of the entire project site coincidental with optimum flowering periods of sensitive plants.

Caltrans biologists conducted a rare plant survey on April 24, 2002. Various field surveys were also conducted by Caltrans biologists in January and April through June 2002 to assess existing natural resources and potential impacts. Emphasis was placed on the special status species that may occur. The project site was field reviewed to 1) identify habitat types; 2) identify factors indicating the potential for rare species; 3) identify rare species present; and 4) identify potential problems for the study. Various agencies consulted include the California Department of Fish and Game (CDFG), National Marine Fisheries Service (NMFS), and the U.S. Fish and Wildlife Service (USFWS).

3.12.1 Affected Environment

The project area is located in Contra Costa County, California, in the Great Central Valley Floristic Province, San Francisco Bay Area subregion (Hickman 1993). Topography of the region is characterized by rolling hills with moderate to steep slopes, dissected by ephemeral and perennial drainage channels. The rolling hills, divided by east-west drainages, form shaded canyons and slopes with north-west exposures. Hillsides are vegetated with grassland interspersed with or bordered by scrub or woodland communities. Terrestrial communities of the study area are classified as:

- Altered communities: ruderal/annual grassland and landscaped, physically modified by human activity, as a result of grading and landscaping. These areas are generally considered to have a limited biological value due to the lack of intact native species.
- Annual grassland: areas in the study area that occur primarily outside of state right-of-way and are subject to moderate to intensive grazing.
- Northern coastal scrub/perennial grassland: dense patches of evergreen shrubs less than 2 meters (6.6 feet) tall, with patches of coastal prairie.
- Central coast riparian scrub: occurring in natural and engineered drainages in the study area with seasonal and perennial surface flow (Holland 1986; Sawyer and Keeler-Wolf 1995).

Many areas support a mix of native and non-native shrub, grass, and herbaceous species that do not represent intact native landscapes. Patches of native vegetation are scattered throughout less disturbed areas of the study area. Construction and on-going maintenance of I-80 have resulted in removal of native vegetation and soils, alteration of natural drainage channels and an introduction of invasive ruderal vegetation.

Vegetation species in the vicinity but that were either not observed or its presence considered unlikely due to the level of disturbance in the area include:

Mt. Diablo fairy-lantern: not identified as a federal or state listed species, but included as a California Native Plant Society (CNPS) List 1B species.

Western leatherwood: not identified as a federal or state listed species, but included as a California Native Plant Society (CNPS) List 1B species.

Fragrant fritillary: identified as a federal species of concern and a CNPS list 1B species.

Diablo helianthella: identified as a federal species of concern and a CNPS list 1B species.

Santa Cruz tarplant: identified as a federally threatened and state endangered species and a CNPS list 1B species.

Contra Costa goldfields: identified as a federally endangered and a CNPS list 1B species.

Robust monardella: not identified as a federal or state listed species, but included as a California Native Plant Society (CNPS) List 1B species.

Rayless ragwort: not identified as a federal or state listed species, but included as a California Native Plant Society (CNPS) List 1B species. (Skinner and Pavlik 1994).

3.12.2 Impacts

No listed endangered or threatened species, listed critical habitat or other sensitive biological resources are expected to be negatively impacted. Based on surveys conducted in the project corridor, published and unpublished information available on special-status species occurrences in the project vicinity, and personal communications with regulatory agency biologists familiar with the project area, Caltrans has determined that the proposed project 1) will not affect Critical Habitat for listed species, or species proposed for or are candidates for listing as threatened or endangered; 2) *may affect, but is not likely to adversely affect* three federally listed plant species (soft birds-beak, Santa Cruz tarplant, and Contra Costa goldfields); and 3) *may affect, but is not likely to adversely affect* nine plant species that are identified as non-listed federal species of concern.

No listed endangered or threatened species, listed critical habitat or other sensitive biological resources are expected to be negatively impacted. Caltrans will implement all measures and conditions required by the state and federal permitting agencies, including the San Francisco Regional Water Quality Control Board, ACOE, CDFG, NMFS and USFWS, to minimize potential direct and/or indirect impacts.

3.12.3 Mitigation/Avoidance Measures

The project will avoid all areas of potential habitat and provide Environmentally Sensitive Areas (ESA's) around each area of potential habitat. ESA's will be clearly defined with temporary fencing that will be installed prior to any clearing or excavation. The location of ESA fencing will be identified during pre-construction by a district biologist. The fencing will be installed by the contractor and will remain in place until construction activities are completed.

The project may remove various Eucalyptus trees and non-native vegetation. Re-vegetation in these areas will consist of native species that occur in the project area.

3.12.4 Permits

The California Department of Fish and Game recommended that a CDFG 1601 Streambed Alteration Agreement for encroachment on riparian areas be acquired as a precaution (Botti, 2002). Because only the construction of the eastbound elements of the project would potentially affect riparian areas, the 1601 agreement will be acquired once funding is secure for the eastbound portion of the project.

3.13 Visual/Aesthetics

Caltrans staff completed a Visual Impact Assessment for the project in August 2002. The study is bound separately from this EA/IS.

Visual quality is the relative excellence of the visual experience. The degree of excellence is measured by the cumulative evaluation of the study area's vividness, intactness, and unity. All three must be given a high score for an area to have a high visual quality.

Vividness is the visual power and memorability of landscape components as they combine into striking and distinctive visual patterns. Intactness is the visual integrity of the natural or man-made landscape and freedom from clutter. It is a well-kept landscape. Unity is the visual coherence and compositional harmony of a landscape considered as a whole.

Scenic resources are attributes, characteristics, and features of landscapes that provide varying responses and degrees of benefits to people. The uniqueness and/or quality of a scenic resource determines its significance.

The project area was divided into three landscape units (Figure 3.13-1). Each landscape unit was field checked and evaluated. Visual simulations were prepared for each landscape unit (Figures 3.13-2 to 3.13-5).

Viewer Groups

Two major viewer groups are identified for the project area: residents and highway travelers. Visual impacts are discussed for each group.

3.13.1 Affected Environment

The project area is located in Contra Costa County in the Great Central Valley Floristic Province, San Francisco Bay Area subregion. Topography of the region is characterized by rolling hills with moderate to steep slopes, dissected by drainage channels. The rolling hills dissected by east-west drainages form shaded canyons and slopes with north–west exposures. Hillsides are vegetated with grassland interspersed with or bordered by scrub or woodland communities. Terrestrial communities in the study area are classified as altered communities, annual grassland, northern coastal scrub/perennial grassland, and central coast riparian scrub.

Many areas support a mix of native and non-native shrub, grass and herbaceous species that do not constitute intact native species. Patches of native vegetation are scattered throughout less disturbed areas of the study area. Construction and on-going maintenance of I-80 have resulted in removal of native vegetation and soils, alteration of natural drainage channels, and an introduction of exotic landscape vegetation.

Landscape Assessment Units

The project area has been divided into three Landscape Assessment Units. Landscape Assessment Unit 1 includes the area at the southern project limits between SR 4 and Willow Avenue. All of the residential areas within the project boundary are included within Landscape Assessment Unit 2. This area is comprised of all properties from Willow Avenue to California Street. Landscape Assessment Unit 3 includes the areas between California Street and the project limits to the north (Figure 3.13-1).

Landscape Assessment Unit 1

The highway at this location is depressed with approximately 30-meter (98.5-foot) high cut embankments on both sides. The land on the west side of I-80 is currently vacant with some oil storage tanks. The properties on the east side of the highway are developed residential units.

In addition to the construction of HOV lanes both on westbound and eastbound sides of the highway, a 4.3 meters (14 foot) high retaining wall will be constructed on top of the slopes on both sides of the highway for structural stability.

Landscape Assessment Unit 2

The properties within Landscape Assessment Unit 2 are developed residential units. The exception is at the Willow Avenue Interchange, where there is commercial use on the southeasterly quadrant with a park and ride lot on the northeasterly quadrant. The

interchange is planted with mature trees and shrubs, which provide a visual buffer for highway-related activities and automobiles.

The highway is generally situated lower than the surrounding land uses by approximately 20 meters (65.5 feet). These large cut slopes currently provide a visual buffer for the existing homes. The exceptions are in two areas, one near Hawthorne Drive and another at California Street. Some of the homes on Hawthorne Drive have views of the highway. Several homes near California Street on both sides of the highway also view the highway.

Landscape Assessment Unit 3

On the north side of California Street, the highway is placed on fill material. A retaining wall made of railroad ties will be constructed. The adjacent land uses in this area are comprised of oil storage tanks and open space, with no permanent viewers.

3.13.2 Impacts

Within Landscape Assessment Unit 1, there are no views of the highway from the adjacent properties. These properties lie on embankments above the highway. Major viewers of the highway are the drivers. These viewers currently see the existing four-lane highway with high cut embankments on each side.

Travelers will see the retaining wall on top of the slopes. These walls however, will not create an adverse visual impact, as they will be located above the vehicular lines of sight. Currently, drivers are exposed to high volumes of traffic and the additional lane will not create an adverse visual impact for these viewers (Figure 3.13-2).

With Landscape Unit 2, the proposed HOV lane will not create an adverse visual impact for the viewers near this interchange. These viewers are currently exposed to similar views of the highway.

A retaining wall/soundwall (Soundwall WB-1) 4.3 meters (14 foot) high and 303 meters (994 feet) long is proposed along the west side of the highway just north of the Willow Avenue Interchange. The wall will be constructed near the shoulder of the road. This wall will create a positive visual impact for the homes, as their views of the highway will be totally obscured. In addition, the existing mature plantings will remain as a visual buffer between the wall and the homes.

Where Soundwall WB-1 ends, another soundwall (Soundwall WB-2) is proposed on top of the existing slope at the right of way line. This 4.3 meter (14 foot) high soundwall extends approximately 175 meters (574 feet). Some of the homes on Hawthorne Drive currently have views of the highway. The highway will no longer be visible to the residents once Soundwall WB-2 is constructed. This is a positive visual impact for these residences.

Several homes on the west side of the intersection of California Street and Interstate 80 have views of the highway. One house at the corner on California Street has a visual buffer of several pine trees within the right of way. However, Caltrans is attempting to acquire this property and will demolish the house as part of the California Street overcrossing replacement. A 185 meters (607 foot) long and 4.3 meters (14 foot) high soundwall is proposed at this location (Soundwall WB-3). The top of the wall will be approximately the same height as the handrail on California Street overcrossing structure. The footing for the soundwall will be approximately 1.8 to 2.4 meters (6 to 8 feet) from the existing pine tree trunks.

On the east side of the highway, near California Street, several homes currently see the automobiles on the highway in the foreground, while they also have views of the waters of the Carquinez Strait beyond. A 5-meter (16-foot) high, 147 meters (482 feet) long soundwall is proposed at this location (Soundwall EB-5).

There are three homes on Springwood Street, north of California Street. Two of the homes currently have a wooden fence at the perimeter of their side yards. This fence obstructs views of the highway. The proposed project will not have an adverse visual impact for these homes. A third home at the end of Springwood Street currently has views of the highway. Soundwall EB-5 will act as a visual buffer to screen views of the highway for this home (Figure 3.13-3).

A private parkway begins south of California Street and east of I-80 and extends to Willow Avenue.

The residence located on the south side of California Street currently has views of the highway in the foreground as well as the waters of the Carquinez Strait beyond. A 5-meter (16-foot) high soundwall extending approximately 100 meters (328 feet) is proposed on top of the existing highway slope for this area (Soundwall EB-4). After construction of the soundwall, this residence will not see the highway, but will maintain views of the waters of the Carquinez Strait. This is a positive visual impact for the residence (Figure 3-13-4).

A similar visual impact will be created for the second house from the corner. The third house currently has views of the Carquinez Strait beyond. Soundwall EB-4 end at the trunk of the pine tree, leaving the view of the Carquinez Strait. As a result, the views of the third home will not be affected (Figure 3.13-5).

All other residences on the east side of the highway are currently well above the highway and have no views of vehicles. The proposed project will not impact their views. There is no view impairment for this area.

Travelers of the highway will be exposed to one HOV lane in each direction. The proposal will not create an adverse visual impact for drivers, as they are currently exposed to similar views.

The proposal will not result in an adverse visual impact for viewers within Landscape Unit 3. There will be no visual impairment for this area. Travelers will be exposed to an additional HOV lane in each direction. This is not an adverse visual impact for travelers who are currently exposed to similar views of the highway and surrounding land uses.

The project will not result in an adverse visual impact for the homes in the area. The proposed project will be a positive visual impact for the majority of the homes. The proposed soundwalls will create a visual buffer for the homes by obstructing their views of the highway. Near California Street, the proposed soundwalls will obstruct views of the highway, while views of the Carquinez Strait will be maintained.

3.13.3 Mitigation/Avoidance Measures

The following measures are proposed to reduce or eliminate any potential impacts to visual resources:

- Provide plantings for all proposed soundwalls to soften their appearance. Plant materials to be compatible with those currently found in the vicinity of the project.
- All soundwall aesthetics to be compatible with the existing walls found in the vicinity of the project area.
- All bridge structures and rail aesthetics on the California Street Bridge to be compatible with existing structures found in the vicinity of the project.
- Provide Erosion Control Type 'D' seeding in all areas affected by a cut or fill.
- All gore areas are to be paved with color-treated stamped concrete compatible with those gore areas found in the project vicinity.
- Replace all trees to be removed with like varieties near their original location.
- Provide native and draught tolerant shrubby ground covers for the Willow Avenue interchange. The existing irrigation system may be utilized until these plantings are established.
- Provide sedimentation barriers (such as hay bales or soil filter fabrics) to save topsoil and protect adjacent land and waterways from construction runoff. Sedimentation

barriers preserve topsoil and help prevent amendments from washing onto adjacent lands and into local and regional waterways.

- Topsoil should be collected from the project site prior to construction, stockpiled, and later applied to the completed slopes. This topsoil provides an ideal growing medium for erosion control seeding while containing needed fertility for plant establishment. Erosion is the prime mover of sediment. Erodible soils must be controlled as early as possible. The Caltrans Office of Landscape Architecture will customize erosion control plans for the specific requirements of this project.

Figure 3.13-1. Landscape Assessment Units

Figure 3.13-2. Visual Simulation #1

Figure 3.13-3. Visual Simulation #2

Figure 3.13-4. Visual Simulation #3

Figure 3.13-5. Visual Simulation #4

3.14 Wetlands and Other Waters of the United States

Caltrans biologists completed a Natural Environment Study for the project in August 2002. The study is bound separately from this EA/IS.

Under Section 404 of the Clean Water Act, the U.S. Army Corps of Engineers (ACOE) is responsible for regulating the discharge of fill material into wetlands and other waters of the United States. Waters of the U.S. and their lateral limits are defined in 33 CFR Part 328.3 (a) and include streams that are tributary to navigable waters and their adjacent wetlands. Wetlands that are not adjacent to waters of the U.S. are termed “isolated wetlands” and, in many cases are also subject to ACOE jurisdiction.

Surveys of the project site identified areas potentially subject to jurisdiction by the ACOE under Section 404 of the Federal Clean Water Act of 1972 (33 U.S.C. 1344). Field investigations were conducted to evaluate the extent of agency jurisdiction on the project site. The extent of ACOE jurisdiction was determined by H. Hashemi, Caltrans District 4 Biologist, in June and July 2001. The delineation method followed the ACOE Wetland Delineation Manual (Environmental Laboratory 1987). On July 11, 2002, the ACOE verified the extent of their jurisdiction (Appendix F).

3.14.1 Affected Environment

Waters of the U.S. occurring in the I-80 HOV project corridor consist of portions of Canada del Cierbo Creek, Rodeo Creek, Refugio Creek, and ephemeral and perennial drainage channels. Under ACOE jurisdiction, only 0.011 hectares (0.028 acres) of wetlands/other waters of the U.S. occur within the project area (see Figures 1-2c and 1-2f).

3.14.2 Operational Impacts

The proposed project will avoid both temporary and permanent impacts to any wetlands or waters of the U.S. subject to ACOE jurisdiction. As a result, a Nationwide Permit from the ACOE for impacts to jurisdictional wetlands and waters of the U.S. under Section 404 of the Clean Water Act, as well as a Water Quality Certification from the San Francisco Bay Regional Water Quality Control Board (RWQCB) pursuant to Section 401 of the Clean Water Act, are not necessary.

3.14.3 Construction Phase Impacts

Wetlands and other waters will be avoided during construction. Wetlands and other waters that will be avoided by the project will be identified as environmentally sensitive areas (ESA's), and will be clearly defined with temporary fencing that will be installed prior to any clearing or excavation. As a first order of work, the location and placement of ESA fencing

will be directed by a district biologist. The fencing will be installed by the contractor and will remain in place until construction activities are completed. The wetland located along the east side of the Willow Avenue eastbound on-ramp will be protected from construction activities by a temporary retaining wall.

As a result, temporary impacts to wetlands and other waters during construction are not anticipated.

3.15 Wildlife

Caltrans biologists completed a Natural Environment Study for the project in August 2002. The study is bound separately from this EA/IS.

Various consultations, sources and methodologies were used to conduct the natural environmental study. Research involved a review of published literature, maps, photography, and consultation with resource agencies and biologists who have expertise and experience with local (project area) biological resources of concern. Caltrans established a study area to define the geographic boundaries of natural resource studies.

Caltrans biologists developed a list of special-status animal species from a review of the California Natural Diversity Data Base for the Benicia and Mare Island U.S.G.S. 7.5 minute quadrangle (CNDDDB 2001). Pursuant to Section 7 of the Endangered Species Act, a special-status species list was requested and received from the USFWS.

Caltrans biologists conducted field surveys to gather site-specific biological data. In order to comply with the provisions of various state and federal environmental statutes and executive orders, the potential impacts to natural resources of the project area were investigated and documented. Species-specific studies were conducted to evaluate the presence, absence, and/or suitability of habitats for special-status animal taxa potentially occurring on the project site. Field investigations conducted in support of the biological assessment include:

1. Surveys to evaluate habitat suitability for California red-legged frog and other sensitive animal taxa.
2. Visual and auditory surveys for sensitive birds and mammals.

Caltrans biologists conducted a wildlife survey, as well as a habitat assessment for red-legged frog, on May 1, 2002. Various field surveys were conducted in January and April through June 2002 to assess existing natural resources and potential impacts. Emphasis was placed on the special status species that may occur. The project site was field reviewed to 1) identify habitat types; 2) identify factors indicating the potential for rare species; 3) identify rare

species present; and 4) identify potential problems for the study. Various agencies were consulted including CDFG, NMFS, and USFWS.

3.15.1 Affected Environment

Animal species occurring within these communities, such as California vole or meadow mouse (*Microtus californicus*), western harvest mouse (*Reithrodontomys megalotis*), Botta's pocket gopher (*Thomomys bottae*), California ground squirrel (*Spermophilus beecheyi*), black-tailed jackrabbit (*Lepus californicus*), striped skunk (*Mephitis mephitis*), gray fox (*Urocyon cinereoargenteus*), black-tailed deer (*Odocoileus hemionus columbianus*) and red-tailed hawk (*Buteo jamaicensis*), reflect climatic and physical conditions of the project region and on-going human-induced disturbances.

The California Natural Diversity Database and the special-status species list generated by the USFWS identified 16 special-status animal species that occur or potentially occur in the project's geographic area; four special-status animal species could potentially occur within the project site. These are the California red-legged frog (*Rana aurora draytonii*), western pond turtle (*Clemmys marmorata*), Alameda whipsnake (*Masticophis lateralis euryxanthus*), and Cooper's hawk (*Accipiter cooperii*).

3.15.2 Impacts

Based on surveys conducted in the project corridor, published and unpublished information available on special-status species occurrences in the project vicinity, and personal communications with regulatory agency biologists familiar with the project area, Caltrans has determined that the proposed project 1) will not affect Critical Habitat for listed species, or species proposed for or are candidates for listing as threatened or endangered; 2) *may affect, but is not likely to adversely affect* five federally listed animal species: delta smelt, California red-legged frog, Alameda whipsnake, California clapper rail, or the saltmarsh harvest mouse; and 3) the proposed project activities *may affect, but is not likely to adversely affect* 11 animal species that are identified as non-listed federal species of concern.

No listed endangered or threatened species, listed critical habitat or other sensitive biological resources are expected to be negatively impacted. Caltrans will implement all measures and conditions required by the state and federal permitting agencies, including the San Francisco Regional Water Quality Control Board, ACOE, CDFG, NMFS, and USFWS, to minimize potential direct and/or indirect impacts.

3.15.3 Mitigation/Avoidance Measures

The project will avoid all areas of potential habitat and provide Environmentally Sensitive Areas (ESA's) around each area of potential habitat. ESA's will be clearly defined with temporary fencing that will be installed prior to any clearing or excavation. The location of

ESA fencing will be identified during pre-construction by a district biologist. The fencing will be installed by the contractor and will remain in place until construction activities are completed.

Pre-construction surveys for nesting raptors and other migratory bird species shall be conducted by a qualified biologist in all appropriate habitat. If no nests are found, no further mitigation is required. To avoid the potential nesting of raptors and other migratory birds, vegetation should be cleared the winter (September-March) prior to construction, if possible.

Chapter 4 Cumulative Impacts

The Council of Environmental Quality (CEQ) National Environmental Protection Act (NEPA) guidance define cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions.” (40 CFR section 1508.7). The scope of this cumulative impact chapter is the existing condition and all reasonable foreseeable transportation projects in the future. Only those resources that are affected by this project, and thus can contribute to a cumulative impact, are discussed here.

4.1 Relevant Projects

Five additional transportation projects including this HOV Gap Closure Project were looked at for the cumulative analysis along the Interstate 80 (I-80) corridor. Each of these additional projects are summarized below. Caltrans also contacted Contra Costa County and the City of Hercules for information on large land use projects anticipated within several years. No large projects are proposed (Herd 2002).

Carquinez Bridge Project:

Phase 1 includes a new westbound suspension bridge (4 lanes, including an HOV lane and bicycle/pedestrian pathway) and westbound HOV lane from SR 29 to the south end of the Carquinez Bridge. Phase 2 extends the HOV lane from the south end of the bridge to just south of the Cummings Skyway Interchange and modify Crockett interchange. This project is currently under construction.

Hercules Transit Center Relocation and Expansion:

The project includes replacing the existing 211-space park-and-ride lot at San Pablo Avenue/Sycamore in Hercules with a four level, 500-space park-and-ride structure on Willow Avenue. The purpose of the project is to reduce congestion in the I-80 corridor. The project is scheduled to be complete in 2005.

Capitol corridor train station in Hercules:

The project involves the construction of a new Capitol Corridor train station in Hercules. The new station includes construction of two platforms, installation of train amenities, construction of a three level parking structure, and roadway access to the station. The purpose of the project is to provide congestion relief in the I-80 corridor and serve and facilitate future ridership. The project is scheduled to be complete in 2005.

Richmond Parkway Transit Center, Phase 1:

The project includes signal reconfiguration/timing, a 700-space parking facility, and security improvements at the Richmond Parkway Transit Center. It also includes access improvements to Richmond Parkway, widening Blume Drive, and providing direct HOV lanes from the parking structure onto I-80 HOV lanes. The purpose of the project is to relieve congestion and expand bus transit capacity. The project is scheduled to be complete in 2006.

AC Transit Enhanced Bus Service in San Pablo Avenue Corridor:

The purpose of the project is to improve transit along the San Pablo Avenue corridor by constructing new passenger stations, improving roadway geometric, and adding information kiosks. The project is scheduled to be complete in 2008.

4.2 Construction

The Interstate 80 HOV Gap Closure Project in conjunction with future projects in the area would result in construction related impacts (i.e., air quality, noise, water quality). However, the proposed project, as well as other future development projects, would comply with mitigation requirements based on federal, state, and local policies. Adherence to these mitigation requirements would ensure that this project, along with other current and foreseeable future projects, would not contribute to cumulative construction impacts.

The construction schedule for the proposed project is from late 2003 to the summer of 2005. The Carquinez Bridge project will be completed by this time. Two of the future projects, Richmond Parkway Transit Center and AC Transit Enhanced Bus Service, won't be completed until at least a year after the HOV gap closure project. The other two future projects, the Hercules transit center relocation and expansion and the Hercules Capitol corridor train station, may be in construction at the same time as the Contra Costa Gap Closure Project. However, these projects are much smaller in scale than the proposed and will likely have a shorter construction period. No cumulative impacts due to construction timetables are anticipated.

4.3 Air Quality

On March 18, 2002 the FHWA and the Federal Transit Administration (FTA) approved the MTC's finding that the 2001 Regional Transportation Plan for the San Francisco Bay Area conforms to the approved emissions budget of the proposed Ozone Attainment Plan (Ozone SIP). This puts the nine-county region in conformity with all transportation-related federal air quality requirements.

This proposed project would result in a facility that will be smaller and less congested than comparable facilities within the same Air District. Since the comparable facilities are in an area that meets air quality standards (maintenance area), this project will also meet microscale air quality requirements and will therefore have no significant impact on air quality or cause exceedances of state or federal CO standards. Therefore, the project is considered to have no cumulative impacts.

4.4 Community Impacts

4.4.1 Residential Displacement

None of the projects require the displacement of large numbers of residents in the Rodeo community, where the impacts of the proposed project on residences would occur. The residential displacements from the Carquinez Bridge Project will have been relocated prior to the start of this project. The proposed project would not make a cumulatively considerable contribution to this impact.

4.4.2 Community Cohesion

None of the projects would likely place physical or psychological barriers to interaction in the Rodeo community, where construction impacts would temporarily limit access on California Street. As a result, the proposed project would not make a cumulatively considerable contribution to other projects in the area that may place barriers to interaction between portions of communities.

4.4.3 Property/Housing Values

The transportation projects would likely improve access between the project area and other areas in this region, and to improve interregional transportation. This would likely increase property values in the project area. The degree to which this would be a beneficial or adverse impact would likely vary from one property to another.

4.5 Economics and Employment

4.5.1 Ramp Closures

Except for the Carquinez Bridge Project, none of the other projects proposed for this area involve the temporary closure of ramps during construction activities. Ramp closures related to the Carquinez Bridge Project will end by the summer of 2003. The first phase of the Interstate 80 HOV project would not begin construction until late 2003 or early 2004 (the second phase would not begin until funding is secured). Cumulative construction impacts

(including as a result of ramp closures and/or detours) at multiple points in the transportation system are not anticipated.

4.5.2 Regional Economic Impacts

The proposed projects would likely have a beneficial impact on the regional movement of people and goods.

4.5.3 Growth Inducement

The proposed project would contribute to the construction of a network of HOV lanes extending through the City of Vallejo to the Bay Bridge. The projects proposed for this area would accommodate planned regional growth. Because HOV lanes provide a time savings over mixed-flow lanes, they will provide an incentive to commuters to reduce their use of SOVs.

4.6 Land Use Impacts

4.6.1 Land Acquisition

The projects proposed in this area may require the conversion of privately-owned property to public use as components of transportation facilities. This is not likely to have a significant impact on land use patterns in this region. The proposed project does not make a cumulatively considerable contribution to this impact.

4.7 Noise

The noise environment within this corridor is dominated by traffic traversing I-80. Sound levels adjacent major highways typically exceed 69 decibels, as is the case with this portion of I-80. Sound walls are proposed in sensitive land use areas where a noise impact occurs and is deemed reasonable and feasible. The project will only result in a maximum noise increase of 2 decibels.

Although noise abatement will be implemented at certain locations, the projects will result in unabated noise impacts in some locations where abatement is not reasonable and/or feasible. Considering I-80 is the predominate noise source, the cumulative noise effects of this project in conjunction with existing noise sources and near term future projects would be minimal.

4.8 Transportation

The operational cumulative impact of these transportation projects would be to create a more efficient transportation system.

Chapter 5 California Environmental Quality Act Evaluation

5.1 CEQA Environmental Checklist

One of the basic purposes of CEQA is to inform state, regional and local governmental decision makers and the public of impacts of proposed activities, and in particular, those impacts that are either significant or potentially significant.

Determining and documenting whether an activity may have a significant effect on the environment plays a critical role in the CEQA process. The following CEQA Environmental Significance Checklist is a device that was used to identify and evaluate any potential impacts from the proposed activity on physical, biological, social and economic resources. This checklist is not a NEPA requirement.

Differences do exist in the way impacts are addressed in CEQA environmental documents as compared to NEPA environmental documents. While CEQA requires that environmental document state a determination of significant or potentially significant impacts, as has been done in the following CEQA checklist, NEPA does not. It can be seen that having to address significant or potentially significant impacts in joint CEQA and NEPA environmental documents can be confusing especially in those instances where the two laws and implementing regulations have different thresholds of significance.

Under NEPA, the degree to which a resource is impacted is only used to determine whether a NEPA Environmental Impact Statement (EIS) or some lower level of NEPA documentation would be required. Under NEPA, once the federal agency has determined the magnitude of the project's impacts and the level of environmental documentation required, it is the magnitude of the impact that is evaluated in the environmental document and no judgement of its degree of significance is deemed important in the document text. For the purpose of the impact discussion in this document, determination of significant or potentially significant impacts is made only in the context of CEQA. Although not explicitly identified in this document, impacts in the context of NEPA can be assumed to be minimal or non-existent.

The following CEQA checklist identifies physical, biological, social and economic factors that might be affected by the proposed project. In many cases, background studies performed in connection with the projects indicate no impacts. A NO IMPACT answer in the last column reflects this determination. Where there is a need for clarifying discussion, the discussion is included Chapter 5 following the checklist below. The words "significant" and "significance" used throughout the following checklist are related to CEQA, not NEPA, thresholds.

CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

AESTHETICS - Would the project:

a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic building within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

AGRICULTURE RESOURCES - In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

AIR QUALITY - Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Expose sensitive receptors to substantial pollutant concentration?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Create objectionable odors affecting a substantial number of people?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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BIOLOGICAL RESOURCES - Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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COMMUNITY RESOURCES - Would the project:

a) Cause disruption of orderly planned development?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Be inconsistent with a Coastal Zone Management Plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Affect life-styles, or neighborhood character or stability?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Physically divide an established community?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Affect minority, low-income, elderly, disabled, transit-dependent, or other specific interest group?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) Affect employment, industry, or commerce, or require the displacement of businesses or farms?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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g) Affect property values or the local tax base?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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h) Affect any community facilities (including medical, educational, scientific, or religious institutions, ceremonial sites or sacred shrines?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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i) Result in alterations to waterborne, rail, or air traffic?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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j) Support large commercial or residential development?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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k) Affect wild or scenic rivers or natural landmarks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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l) Result in substantial impacts associated with construction activities (e.g., noise, dust, temporary drainage, traffic detours, and temporary access, etc.)?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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CULTURAL RESOURCES - Would the project:

CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Disturb any human remains, including those interred outside of formal cemeteries?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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GEOLOGY AND SOILS - Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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ii) Strong seismic ground shaking?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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iii) Seismic-related ground failure, including liquefaction?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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iv) Landslides?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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b) Result in substantial soil erosion or the loss of topsoil?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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HAZARDS AND HAZARDOUS MATERIALS -

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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HYDROLOGY AND WATER QUALITY - Would the project:

a) Violate any water quality standards or waste discharge requirements?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) Otherwise substantially degrade water quality?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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j) Inundation by seiche, tsunami, or mudflow?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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LAND USE AND PLANNING - Would the project:

a) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

b) Conflict with any applicable habitat conservation plan or natural community conservation plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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MINERAL RESOURCES - Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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NOISE - Would the project:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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POPULATION AND HOUSING - Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Displace substantial numbers of existing housing

CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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PUBLIC SERVICES -

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

Fire protection?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Police protection?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Schools?

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Parks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

Other public facilities?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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RECREATION -

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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TRANSPORTATION/TRAFFIC - Would the project:

a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

management agency for designated roads or highways?

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incomplete uses (e.g., farm equipment)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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e) Result in inadequate emergency access?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

f) Result in inadequate parking capacity?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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UTILITY AND SERVICE SYSTEMS - Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	-------------------------------------	--------------------------

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

e) Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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CEQA			
Potentially significant impact	Less than significant impact with mitigation	Less than significant impact	No impact

g) Comply with federal, state, and local statutes and regulations related to solid waste?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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MANDATORY FINDINGS OF SIGNIFICANCE -

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, or cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
--------------------------	--------------------------	--------------------------	-------------------------------------

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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5.2 Discussion of CEQA Checklist Responses

Please refer to the appropriate sections in Chapter 3 for a discussion of checklist responses.

Chapter 6 Coordination and Consultation

Public involvement requirements have been established by statute, as in NEPA and CEQA, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), and by regulations and guidance issued by federal and state agencies.

During the preparation of this assessment, Caltrans contacted numerous agencies and community organizations within the project area. A list of these contacts is included below:

Coordination and Consultation for Biology

California Department of Fish and Game

Fred Botti

April-May 2002

Kristine Atkinson, Bay Area Unit Biologist

April-May 2002

LSA Associates, Inc.

David Muth, Herpetologist

May 08, 2002

National Marine Fisheries Service

Eric Schmidt

April-May 2002

Concurrence: Central California Coast steelhead
(Appendix E)

May 23, 2002

U.S. Fish and Wildlife Service

Harry Mossman, Biological Technician

December 2002

David Oakey, Biologist

February 2002

Rick Burmester, Biologist

April 05, 2002

Vincent Griego, Biologist

April-May 2002

Dan Buford, Branch Chief

May 2002

Concurrence: California red-legged frog (Appendix F)

June 26, 2002

U.S. Army Corps of Engineers

John Yeakel, Regulatory Branch

March - June 2002

Wetland verification (Appendix D)

June 11, 2002

Coordination and Consultation for Community Impacts

Contra Costa County Community Development

Steven Goetz, Principal Planner

May 2002

Hillary Herd, Transportation Planner

June 2002

John Swett Unified School District

Michael Roth, Superintendant

July – November 2002

Hillcrest Elementary School

Linda Larsen, Principal

July – September 2002

Rodeo-Hercules Fire District

Alen Biagi, Battalion Chief

July 2002

West Contra Costa County Transportation Advisory Committee

Lisa Hammond, Executive Director June 2002

Contra Costa County Sheriff's Department

James Hatchell, Sheriff's Lieutenant June 2002

City of Hercules

Steven Lawton, Community Development Director June 2002

Coordination and Consultation for Cultural Resources

Native American Heritage Commission

Debbie Pilas-Treadway January 2002

Local Native American representatives contacted in March and April 2002:

- Amah/Mutsun Tribal Band
- The Ohlone Indian Tribe
- Indian Canyon Mutsun Band of Costanoan
- Trina Marine Ruano Family
- Jakki Kehl
- Ella Rodriguez
- Katherine Erolinda Perez
- Marjorie Ann Reid
- Rosemary Cambra
- Thomas P. Soto

Contra Costa County Historical Society

Betty Maffei, Executive Director January 2002

Other Agency Coordination

Rodeo Municipal Advisory Committee

July – August 2002

Public Open House

On September 17, 2002, Caltrans conducted a public open house for the project at the Hillcrest Elementary School in Rodeo. Staff from various Caltrans functions were present, including environmental, design, construction, right of way, engineering, and project management. Approximately 30 members of the public attended. A copy of the open house report is available from Caltrans. Please contact Ken Lastufka at (916) 274-0586 or ken_lastufka@dot.ca.gov.

Chapter 7 List of Preparers

This Environmental Assessment/Initial Study (EA/IS) was prepared by staff from Caltrans North Region Office (Sacramento and Marysville) and Caltrans District 4 (Oakland). The following Caltrans staff prepared this EA/IS:

Allred, Sarah M., Associate Environmental Planner - Archaeology. B.A., Anthropology; M.A. Candidate, California State University, Sacramento. Twelve years experience in cultural resource investigation/Section 106 Compliance.

Chadha, Rajive, Environmental Engineer. B.A.Sc., Civil Engineering, University of Ottawa, Ottawa, Canada. Eleven years experience in the environmental engineering field involving field work and project management.

Freese, Marsha, Landscape Architect Associate. Registered Landscape Architect #1704. B.S., Landscape Architecture, Iowa State University; M.B.A., University of Phoenix. Twelve years of Landscape Architectural experience.

Hakim, Hamid, Transportation Engineer. Ph.D., Anaerobic Microbiology, Ohio State University; M.S., Environmental Engineering, in progress, California State University, Sacramento. Eleven years experience in water quality studies.

Kawanami, Hiroshi, Transportation Engineer. Thirty two years with Department of Transportation. Last thirteen years with Office of Environmental Engineering, Air and Noise section.

Lastufka, Ken, Environmental Coordinator. B.A., Environmental Studies and M.A., Urban Studies, California State University, Sacramento. Eighteen years experience in environmental analysis/coordination.

Lukkarila, Michele, Environmental Planner - Natural Sciences. B.S., Biology and Ecology, Northern Michigan University, Marquette. Three years experience in field investigations/surveys and preparing environmental documents.

McKeon, Aaron, Transportation Planner - Community Impact Assessment Specialist. B.A., University of Rochester. M.A., Regional Planning, Cornell University. Two-and-a-half years experience preparing community impact assessments.

Momenzadeh, Mahmood, P.E., Transportation Engineer. B.S., Civil Engineering, University of Tehran; M.S., Civil Engineering, Tokyo Institute of Technology; Ph.D., Geotechnical Earthquake Engineering, University of Tokyo. Fifteen years experience in Geotechnical Engineering.

Philipp, Jim, Hydraulic Engineer. B.S., Mechanical Engineering, Registered Civil Engineer in California, San Diego State University. Eight years experience. Contribution: Floodplain Hydraulics Study.

Chapter 8 References

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- Fred Botti, California Department of Fish and Game. Personal communication to Michele Lukkarila, Caltrans. Sacramento, CA. July 8, 2002.
- Janet Buley, Hercules Senior Center. Personal communication to Aaron McKeon, Caltrans. Sacramento, CA. Telephone. July 11, 2002.
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- Shirley Garrison, Coordinator, Rodeo Nutrition Services Program. Personal communication to Aaron McKeon, Caltrans. Sacramento, CA. July 11, 2002.
- Steven Goetz, Principal Planner, Contra Costa County Community Development Department – Transportation Division. Personal communication to Aaron McKeon, Caltrans. Sacramento, CA. May 1, 2002.
- Lisa Hammond, Executive Director, West Contra Costa County Transportation Advisory Committee. Personal communication to Aaron McKeon, Caltrans. Sacramento, CA. June 25, 2002.
- Lieutenant James Hatchell, Sheriff's Lieutenant, Contra Costa County Sheriff's Department. Personal communication to Aaron McKeon, Caltrans. Sacramento, CA. June 26, 2002.
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